

Northamptonshire County Council.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH,

For the Year 1897,

INCLUDING A

Summary of the Annual Reports of the District

Medical Officers of Health,

BY


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County Medical Officer of Health.

Northampton :—

JOS. TEBBUTT (LATE CORDEUX), SWAN YARD, DRAPERY.

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NORTHAMPTONSHIRE COUNTY COUNCIL.

Annual Report of the Medical Officer of Health, FOR THE YEAR 1898.

IN presenting the First Annual Report of the Medical Officer of Health to the County Council of Northamptonshire, I cannot but be mindful of the fact that, as I only took up the duties of that Office on January 1st, 1898, I am not able to speak fully on any matters concerning the state of public health in the County, during 1897, from personal observation.

This Report can, therefore, be little more than a summary of the information which is obtainable by perusal of the Annual Reports, which have been drawn up for the year 1897, by the Medical Officers of Health for their respective Districts within the Administrative County.

Many of these Reports were sent in with great promptitude after the commencement of the year 1898; but none of them were of great length. The last Report was received by me on March 1st, 1898.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

It is much to be regretted that the interest attached by local authorities to the Annual Reports of their Medical Officers of Health appears to be so slight that but few of them are *printed*. Reports which are not printed cannot of course have that circulation which is necessary in any district to secure proper publicity of, and attention to, the valuable suggestions contained in them.

The writing of Annual Reports ought not to be regarded as a mere matter of routine, and the Reports themselves are not intended to be useless. The importance of the Reports should be manifest. They contain records of mortality and sickness, and,

where necessary, the results of enquiries respecting them. They ought to contain information as to local administration of public health, both in ordinary circumstances and to meet special needs; they may contain careful accounts of investigations into obscure occurrences of zymotic disease; and they may convey distinct warnings against the neglect of sanitary precautions. But if these Reports are not printed, and *circulated* according to local requirements, their contents may easily escape that public attention which is due to them, and not be available for subsequent reference.

At present, I find that only Reports for four Urban Districts and six Rural Districts, which have reached me, are printed. It is true that a few others are type-written, but this does not add greatly to their chance of being circulated among interested persons.

The Districts which have the Reports of their Medical Officers of Health printed are :—

1. Kettering	Urban	1. Crick	Rural
2. Kingsthorpe	„	2. Hardingstone	„
3. Rothwell	„	3. Kettering	„
5. Rushden	„	4. Oxendon	„
		5. Potterspury	„
		6. Wellingborough	„

The Districts which have not the Reports of their Medical Officers of Health printed are :—

1. Brackley	Borough	1. Brackley	Rural
2. Daventry	„	2. Brixworth	„
3. Higham Ferrers	„	3. Daventry	„
4. Desborough	Urban	4. Easton-on-the-Hill	„
5. Far Cotton	„	5. Gretton	„
6. Finedon	„	6. Middleton Cheney	„
7. St. James' (N'ton.)	„	7. Northampton	„
8. Oundle	„	8. Oundle	„
9. Wellingborough	„	9. Thrapston	„
		10. Towcester	„

It is to be hoped that this matter of printing the Reports of the District Medical Officers of Health may receive favourable consideration when next those Reports are presented, and that, when printed, they may be so circulated locally as to exercise a beneficial influence in stimulating local opinion in regard to public health administration.

Annual Reports are not, however, the only reports which District Medical Officers of Health are required to make. There are others, which are called "Special" Reports, and which emergencies and other special circumstances may make necessary or desirable. These Special Reports are usually ones of great interest and importance. In common with Annual Reports of Medical Officers of Health, copies of them have to be submitted to the County Council. It can be readily understood, for instance, that it is very desirable that the County Council should be in possession of every information as to the prevalence of infectious diseases afforded by the special reports of the District Medical Officers of Health, particularly when those reports recommend the closure of public elementary schools. And to such an extent is this fact recognised that the Local Government Board in its Order of March, 1891, laid down the following as among the duties of a Medical Officer of Health of a District:—

15.—“He shall give immediate information to Us of any
 “outbreak of dangerous epidemic disease within the
 “District, and shall transmit to Us a copy of each
 “annual report and of any special report. He shall
 “make a special report to Us of the grounds of any
 “advice which he may give to the Sanitary Authority
 “with a view to their requiring the closure of any
 “school or schools, in pursuance of the Code of Regu-
 “lations approved by the Education Department, and
 “for the time being in force.”

16.—“At the same time that he gives information to Us of
 “an outbreak of infectious disease or transmits to Us a
 “copy of his annual report or of any special report, he

“ shall give the like information or transmit a copy of
 “ such report to the County Council or County Councils
 “ of the County or Counties within which his District
 “ may be situated.”

I cannot say to what extent these regulations of the Local Government Board have been conformed to during the year 1897; but it is plainly desirable that they should not be overlooked in the future.

ARRANGEMENT OF REPORT.

It is now necessary to refer to the contents of those Reports which have been received for the year 1897. I have not, however, made an Abstract of each Report separately, as has been done formerly. It has seemed to me preferable to endeavour to frame this Report on such lines as will show the leading features of the several Districts within the Administrative County, whether in respect of Vital Statistics or otherwise, under subject-headings. At the same time, inasmuch as it is most desirable to give particular prominence to the special recommendations or warnings of any District Medical Officer of Health, I have included a table which will show these readily, together with the more important features of each report.

The number of Annual Reports received was twenty-nine. The Urban District of Raunds was not separately established until the latter part of the year, and is, therefore, dealt with in the report of the Medical Officer of Health for the Thrapston Rural District.

AREA AND POPULATION.

There are now thirty Districts within the Administrative County of Northamptonshire, of which 14 are Urban Districts, and 16 are Rural Districts.

The Urban Districts have a total area of 40,375 acres, and the Rural Districts of 543,824 acres.

Their separate acreage is as follows:—

AREA IN ACRES OF URBAN SANITARY DISTRICTS.

<i>Name of District.</i>	<i>No. of Acres.</i>	<i>Name of District.</i>	<i>No. of Acres.</i>
Borough of Brackley ...	3,849	Kettering ...	2,814
„ Daventry...	3,633	Kingsthorpe ...	2,018
„ Higham		Oundle ...	3,144
„ Ferrers...	1,945	Raunds ...	4,460
Desborough ...	2,400	Rothwell ...	3,638
Far Cotton ...	410	Rushden ...	3,778
Finedon ...	3,661	Wellingborough ...	4,265
St. James' (N'ton) ...	360		

AREA IN ACRES OF RURAL SANITARY DISTRICTS.

<i>Name of District.</i>	<i>No. of Acres.</i>	<i>Name of District.</i>	<i>No. of Acres.</i>
Brackley ...	42,435	Middleton Cheney ...	13,888
Brixworth ...	62,648	Northampton ...	16,624
Crick ...	18,547	Oundle ...	57,771
Daventry ...	60,886	Oxendon ...	34,490
Easton-on-the-Hill...	6,341	Potterspury...	19,915
Gretton ...	12,299	Thrapston ...	36,836
Hardingstone ...	32,515	Towcester ...	42,455
Kettering ...	49,338	Wellingborough ...	36,836

The total area of the Administrative County is 584,199 acres.

POPULATION.—The population of the County is shown in the following table:—

Population.	Census, 1891.	Estimated to Middle of 1897.	Increase.	Decrease
Urban ..	76,470	99,878	23,408	
Rural ...	126,811	129,077	2,266	
Total ...	203,281	228,955	25,674	

There was thus in 1897 a net estimated increase of the population in the Administrative County amounting to 25,674 persons since the Census of 1891. The increase is shown to be apparently in Rural as well as Urban Districts; but this requires modification. In only three of the Rural Districts has there been any important estimated increase of the population, namely, the Kettering, Thrapston, and Wellingborough Districts, and, in respect of the Thrapston District, the most considerable increase of population has undoubtedly taken place in that portion of it which was, at the end of the year 1897, constituted the Urban District of Raunds.

The great increase of the population of the County is, therefore, an increase of Urban population rather than Rural population, and the cause of the increase is, mainly, the extension of boot and shoe manufacture.

In some few of the Rural Districts, indeed, the District Medical Officers of Health have estimated their populations as being somewhat less than at the Census of 1891, and in those cases the decrease has been due chiefly to the migration of young persons from agricultural pursuits to more lucrative callings in neighbouring and other towns.

BIRTHS.

There were 6,761 births registered in the Administrative County during the year 1897, and of these 3,416 were births in Rural Districts, and 3,345 were births in Urban Districts. Calculated on the respective total estimated populations, these figures represent a high birth-rate for the combined Urban Districts, and a rather low Birth-rate for the combined Rural Districts.

The average birth-rate of the whole Administrative County per 1,000 of population, and of the combined Urban and Rural Districts respectively, for the years 1890-97, is shown in the following table, together with, for purposes of comparison, the

corresponding rates for England and Wales, and for the 33 large towns in England, taken from the Registrar-General's Returns :—

Districts.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Administrative County ...	24·5	29·3	30·3	29·1	27·9	29·6	28·8	29·5
Urban Districts ..	31·3	30·2	34·2	32·9	32·4	34·5	32·4	33·49
Rural Districts ...	22·3	28·9	28·3	26·8	25·3	26·3	26·1	26·4
England & Wales..	30·2	31·4	30·5	30·8	29·6	30·3	29·7	29·6
Large Towns in England ...	30·4	32·5	31·8	31·8	30·6	31·2	30·7	30·7

From this it will be seen that the birth-rate of the County is nearly equal to that of England and Wales, and that the birth-rate in the Urban Districts of the County is considerably above that of the large English towns.

The Birth-rate varied in the Urban Districts from 14·2 per 1,000 of population in the Oundle District to 41·4 per 1,000 in the Finedon District, while in the Rural Districts the variation was between 21·7 per 1,000 in the Oxendon District and 32·9 per 1,000 in the Wellingborough District.

Arranged in order of their Birth-rates the Urban Districts stand thus :—

	<i>Per 1,000 of Population.</i>		<i>Per 1,000 of Population.</i>
Finedon ...	... 41·4	Rothwell ...	... 33·4
St. James' (N'ton.)	40·0	Brackley Borough ...	29·3
Kingsthorpe ...	38·9	Daventry „ ...	28·4
Desborough...	... 36·7	Far Cotton ...	... 27·4
Rushden ...	... 35·8	Wellingborough ...	27·4
Kettering ...	... 35·2	Oundle ...	... 14·2
Higham Ferrers Borough ...	33·5		

The position of the Rural Districts in respect of their Birth-rates is as follows :—

<i>Per 1,000 of Population.</i>			<i>Per 1,000 of Population.</i>		
Wellingborough	...	32·9	Brackley	...	24·3
Easton-on-the-Hill	...	31·2	Potterspury	...	23·8
Daventry	...	29·6	Towcester	...	23·8
Thrapston	...	28·7	Middleton Cheney	...	23·4
Crick	...	28·4	Hardingstone	...	23·3
Northampton	...	28·0	Oundle	...	23·3
Kettering	...	26·2	Gretton	...	22·6
Brixworth	...	24·4	Oxendon	...	21·7

DEATHS.

General Mortality.—The total number of Deaths registered in the Administrative County during the year 1897 was 3,559, and of these 1,478 occurred in the Urban Districts and 2,081 occurred in the Rural Districts. Calculated on the respective total estimated populations, these figures give a higher Death-rate for the combined Rural Districts of the County than for the combined Urban Districts. How far this unfavourable position of the Rural Districts may be due to neglected sanitation within them, and the favourable position of the Urban Districts to hygienic activity, I am not as yet able to express an opinion; but one very possible cause of this unusual mortality-distribution may be found in the migration of young persons, with very good expectation of life, from the Rural Districts into the Urban ones, and in the continued residence in the Rural Districts of those who have approached advanced age, or in the return thereto of those whom ill-health has driven from the Urban Districts. Wherever there is the attraction of a growing manufacturing centre, there is commonly a disturbance of the surrounding population, and inasmuch as many of the villages of Northamptonshire have been in recent years, and are still, changing their agricultural characteristics for those of manufacturing centres, it is conceivable that they may have caused corresponding disturbances of population around them sufficient to account for the differences in the Death-rates referred to.

The average Death-rate of the whole Administrative County per 1,000 of population, and of the combined Urban and Rural Districts respectively, for the years 1890—97, is shown in the following table, together with, for purposes of comparison, the corresponding rates for England and Wales, and for the 33 large towns in England, taken from the Registrar-General's Returns:—

Districts.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Administrative County ..	14·5	17·8	16·6	15·8	14·8	15·8	14·5	15·5
Urban Districts ...	17·9	15·0	16·1	15·2	14·8	15·1	13·7	14·79
Rural Districts ...	13·8	18·8	16·7	16·2	14·8	16·4	15·1	16·09
England & Wales..	19·5	20·2	19·0	19·2	16·6	18·7	17·1	17·4
Large Towns in England ...	21·6	22·4	20·6	21·5	18·0	20·5	18·9	19·0

From this it will be seen that the death-rate of the county was well below that of England and Wales, as also was the combined Urban death-rate below that of the large towns.

Reference to Table C of this Report shows, however, that the death-rate of the Borough of Brackley was above that of the large towns, and in reference to that the Medical Officer of Health for the Borough reports as follows:—"Excluding 10
 " deaths which occurred in the Workhouse and Cottage Hospital,
 " and calculating on an estimated population of 2,763, the death-rate
 " for the year was 20·9, this compares very unfavourably with
 " the rate for 1896, viz.:—11·9 and with the average of the
 " previous three years, viz.:—13·3. This alarming looking
 " increase in the rate need not cause any uneasiness, for an
 " examination of the Registrars' returns fails to show that the
 " increased mortality has been due to any serious outbreak of
 " Zymotic disease, and with the exception of whooping-cough
 " (6 deaths) columns 1—14 of the accompanying table are blank.
 " The population of this district being so small, we must expect
 " to have rather wide fluctuations in the death-rate and a true

“average can only be arrived at after a considerable number of
 “years. The rate for 1896 was the lowest on record, and I
 “venture to predict that that for the present year, 1898, will also
 “be low.”

With regard to the Rural Districts there are four whose death-rates are in excess of the rate for England and Wales, and in respect of these—Crick, Gretton, Hardingstone, and Wellingborough,—it may be pointed out that the Medical Officer of Health for Gretton was only appointed in the month of May and, in common with the Medical Officer of Health for the Wellingborough Rural District, has nothing special to report on the general death-rate. The remarks of the Medical Officers of Health for the other districts appear to be worthy of attention in connection with these high mortalities.

The Medical Officer of Health for the Crick District says :—
 “The deaths numbered 46, and consisted of 25 males and 21
 “females, representing a death-rate of 18·9 per 1,000 ; but, adding
 “the deaths of 3 persons belonging to the district, 2 of which
 “occurred in the Rugby Union Workhouse, and one in the Hospital
 “of St. Cross, the actual death-rate would be more correctly
 “represented at 20·1 per 1,000. This death-rate is considerably
 “above the average, but it will be seen from the appended table
 “A. that 25, or more than one-half the total number of deaths,
 “occurred among people aged 65 and upwards.”

The Medical Officer of Health for the Hardingstone District reports :—“The total number of deaths during the year was 152,
 “compared with 121 in the previous year, and giving a death-
 “rate of 18 per 1,000, compared with 14·37. This is a very high
 “mortality, and was only equalled in 1888 and 1891 ; these three
 “years show a Death-rate of 18·0 to 18·2 per 1,000,—the highest
 “death-rates since 1883, that is, during the years I have held
 “the office of Medical Officer of Health. The highest mortality
 “has been in the two extremes of life—35 deaths in children
 “under one year of age, and 77 in old people—whilst in the inter-
 “vening periods the rate is lower than usual. There were again

“20 deaths in people over 80 years of age, an exactly similar number to the previous year, but then there were only 54 deaths in people over 60 years of age, against 77 this year. There were more deaths than usual from diseases of the lungs, but no particular disease is answerable for the increased mortality, as the greatest number of deaths comes under the last heading of general or unclassified diseases. No death from Enteric Fever nor from diarrhoea has been recorded this year. The tendency at the present day is for most of the young people in the villages to migrate into the towns, where work is better paid and more plentiful, hence a large and preponderating number of old people are left in the villages, and this accounts for the general high mortality, especially amongst the aged.”

There is thus some ground for regarding the higher mortality of the Rural Districts as compared with the Urban as being possibly due, at any rate in part, to migratory influences.

The Death-rate varied in the Urban Districts from 11·2 per 1,000 of the population in the Far Cotton District, adjoining the County Borough of Northampton on its South side, to 20·9 per 1,000 in the Borough of Brackley. In the Rural Districts the variation in the death-rate was from 8·5 per 1,000 in the Easton-on-the-Hill District, to 20·1 per 1,000 in the Crick District.

Arranged in order of their Death-rates the Urban Districts stand thus :—

	<i>Per 1,000 of Population.</i>		<i>Per 1,000 of Population.</i>
Far Cotton	... 11·2	Rushden	... 15·0
Oundle	... 13·1	Daventry Borough...	15·9
Kingsthorpe	... 13·2	Finedon	... 15·9
Kettering	... 13·5	Rothwell	... 15·9
Wellingborough	... 13·5	St. James' (N'ton)...	18·6
Desborough	... 13·3	Brackley Borough...	20·9
Higham Ferrers Borough	... 14·5		

The position of the Rural Districts in respect of their Death-rates is as follows :—

<i>Per 1,000 of Population.</i>			<i>Per 1,000 of Population.</i>		
Easton-on-the-Hill...	8·5		Thrapston ...	...	16·0
Oxendon ...	...	12·3	Middleton Cheney ...	...	16·1
Daventry ...	...	12·8	Oundle ...	...	17·0
Kettering ...	...	14·0	Northampton ...	...	17·3
Potterspury ...	...	14·6	Wellingborough ...	...	17·8
Brixworth ...	...	15·2	Hardingstone ...	...	18·0
Brackley ...	...	15·4	Gretton ...	...	18·4
Towcester ...	...	15·6	Crick ...	...	20·1

Infantile Mortality.—The death-rate of infants during the year 1897 in the Administrative County was not so favourable as in the year preceding. The mean infant-mortality rate per 1,000 births for the years 1890—96 was 130·1 for the administrative county; during the year 1897, it was 134·0 per 1,000 births. The excess over the mean rate was furnished by the rural districts. The mean rate for the combined urban districts during 1890—96 was 146 per 1,000 births; in 1897, the rate was 142·6 per 1,000 births. The mean rate for the combined rural districts during 1890—96 was, however, 120·3 per 1,000 of the registered births; in 1897, the rate was 125·58 per 1,000 births. Thus, while the rate for the rural districts still maintained its favourable character as compared with that for the urban districts, it was distinctly higher than its average rate for the preceding seven years.

The average infantile death-rate of the whole Administrative County per 1,000 births, and of the combined urban and rural districts respectively, for the years 1890—97, is shown in the following table, together with, for purposes of comparison, the corresponding rates for England and Wales, and for the 33 large towns in England, taken from the Registrar-General's Returns :—

Districts.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Administrative County ...	138	137	125	132	125	135	119	134
Urban Districts ...	169	153	142	140	143	143	132	142
Rural Districts ...	129	130	114	125	112	124	108	125
England & Wales..	151	149	148	159	137	161	148	156
Large Towns in England ...	171	167	163	181	152	182	168	176

From this it will be seen that the infantile death-rate per 1,000 births for the Administrative County was well below that of England and Wales, as also was the like mortality for the combined urban districts below that of the large towns.

There are, unfortunately, but few comments in the reports of the district medical officers of health on the infant-mortality rates; but the remarks to be found in three of those reports appear to have some very distinct bearing on the question of the causes of the excess of that mortality.

The Medical Officer of Health for the Finedon Urban District writes:—"The number of deaths of infants under one year of age number 25, giving us a death-rate of 163·3 per 1,000 births registered. This rate is, as it is all over the country, very unsatisfactory. It is due to too early and improvident marriages, to the marriage of men and women physically unfit to become fathers and mothers, and, last but not least, to the appalling amount of ignorance still prevalent as to what constitutes the proper food for an infant."

Speaking of the improvement in the Infant Mortality in the Kettering Urban District, the Medical Officer of Health concludes by saying "It is to be hoped that the advice so constantly given to mothers, as to the treatment and feeding of their infants, is at last bearing fruit, and that this decided improvement will continue."

Again, in dealing with the same subject, the Medical Officer of Health for the Kingsthorpe Urban District reports that "A large proportion of the deaths were caused by Bronchitis and lung diseases; the same conditions did not prevail amongst the older part of the population."

There can be no question of the enormous importance attaching to the Management and Feeding of Infants, and I have formerly found it useful to periodically distribute among the homes of the poor printed *cards* of "Directions," which, being pierced with an eyelet hole, enabled them to be hung against a wall. These "Directions" I have, therefore, added as an Appendix to this Report, on the chance that they may prove useful as a basis for further independent action in any district of the County. Such "Directions" might also be put into the hands of Registrars of births, for distribution to persons registering the births of infants.

The infantile-mortality rate varied in the Urban Districts from 75 per 1,000 births in the Borough of Higham Ferrers, to 209 per 1,000 births in the Borough of Brackley. In the Rural Districts the variation in this mortality was from 19 per 1,000 births in the Easton-on-the-Hill District, to 180 per 1,000 births in the Middleton Cheney District.

Arranged in order of their Infantile-Mortality rates the Urban Districts stand thus:—

<i>Per 1,000 Births.</i>			<i>Per 1,000 Births.</i>		
Higham Ferrers			Rushden	...	150
Borough	...	75	Kingsthorpe...	...	156
Kettering	...	122	Finedon	...	163
Desborough	...	123	Rothwell	...	181
Daventry Borough	...	125	St. James' (N'ton.)	...	192
Wellingborough	...	129	Brackley Borough	...	209
Oundle	...	131			
Far Cotton	...	140			

The position of the Rural Districts in respect of their Infantile-Mortality rates is as follows :—

	<i>Per 1,000 Births.</i>		<i>Per 1,000 Births.</i>
Easton-on-the-Hill ...	19	Kettering ...	125
Thrapston ...	36	Northampton ...	126
Daventry ...	76	Towcester ...	130
Oxendon ...	90	Gretton... ...	131
Brixworth ...	97	Brackley ...	153
Oundle ...	99	Wellingborough ...	172
Potterspury ...	114	Hardingstone ...	178
Crick... ...	116	Middleton Cheney ...	180

Phthisis Mortality.—The number of deaths attributed to phthisis in the administrative county was 251, of which 116 were in the Urban districts, and 135 in the Rural Districts. Of the total deaths from phthisis, 6 per cent. were recorded as being children under five years of age. The total phthisis death-rate for the County was 1·09 per 1,000 of the population ; for the combined urban districts, 1·16 per 1,000 ; and for the combined rural districts, 1·04 per 1,000.

The following table shows the phthisis death-rate per 1,000 of the population for the whole administrative county, and for the combined urban and rural districts respectively, for the three years 1895—97 :—

Areas.	Phthisis.	1895.	1896.	1897.
Administrative County.	No. of Deaths.	281	249	251
	Rate per 1,000.	1·26	1·1	1·09
Combined Urban Districts.	No. of Deaths.	140	107	116
	Rate per 1,000.	1·56	1·11	1·16
Combined Rural Districts.	No. of Deaths.	141	142	135
	Rate per 1,000.	1·06	1·1	1·04

From this it will be seen that during the last three years there has been a slight but steady reduction in the death-rate from phthisis for the administrative county.

During the year 1897, there were five Urban districts whose phthisis death-rate exceeded the rate from the combined urban districts, namely, Brackley Borough, Higham Ferrers Borough, St. James' (N'ton.), Kingsthorpe and Rushden. In only one of these, however, was the rate greatly above the mean,—the St. James' (N'ton.) district,—and in that case it was nearly double the mean rate.

There were six Rural districts whose phthisis death-rates similarly exceeded the rate for the combined rural districts, namely, Brackley, Gretton, Hardingstone, Middleton Cheney, Northampton, and Wellingborough. Of these, two—Gretton and Northampton—had rates more than double the mean rate for the Rural Districts.

The Medical Officer of Health for the Kettering Urban District reports that “The number of deaths from Phthisis has “been the same for the last three years. Before that, this disease “had been much more fatal in proportion to the population. “Although, no doubt, this improvement is greatly due to the “better method of treatment pursued, yet the improved supply “of light and air to the Factories must also have been of great “service in preventing its developement.”

The Medical Officer of Health for the Oundle Rural District also says as follows:—“The deaths from Tubercular disease or “Consumption are 8 in number. I always consider this to be an “infectious disease and preventable to a great extent, the germ “propagating in localities favourable to its growth. Special “villages seem to be affected; Elton for one is never without “these cases. I do not speak with the same certainty of “Kingscliff, but I expect it is also a tubercular village, whereas “other places never return a case for years. The remedy would “appear to consist in a complete renovation of affected houses as “is done by the Sanitary Authorities in New York and several

“other places on the American Continent, special care being taken to improve the light and ventilation of the dwellings.”

To these remarks I may add that in several of our cities and towns in England—such as Manchester and Salford—disinfection of the houses of phthisical patients is carried out at the request of the patients themselves, or of their friends, or on the advice of their medical attendants, by the local authorities, free of charge.

The phthisis death-rate varied in the Urban Districts from 0·37 per 1,000 of population in the Oundle District to 2·05 per 1,000 in the St. James' (N'ton) District. In the Rural Districts, the variation in this mortality was from 0·4 per 1,000 of population in the Kettering District to 2·4 per 1,000 in the Northampton District.

Arranged in order of their Phthisis death-rates, the Urban Districts stand thus:—

	<i>Per 1,000 of Population.</i>		<i>Per 1,000 of Population.</i>
Oundle ...	0·37	Wellingborough ...	1·16
Rothwell ...	0·46	Kingsthorpe ...	1·26
Far Cotton ...	0·5	Brackley Borough ...	1·4
Desborough...	0·56	Higham Ferrers Borough ...	1·5
Daventry Borough...	1·0	Rushden ...	1·5
Finedon ...	1·08	St. James' (N'ton) ...	2·05
Kettering ...	1·09		

The position of the Rural Districts in respect of their Phthisis death-rates is as follows:—

	<i>Per 1,000 of Population.</i>		<i>Per 1,000 of Population.</i>
Kettering ...	0·4	Brixworth ...	0·9
Easton-on-the-Hill...	0·6	Oundle ...	1·0
Oxendon ...	0·65	Brackley ...	1·15
Thrapston ...	0·68	Hardingstone ...	1·4
Crick ...	0·8	Wellingborough ...	1·4
Potterspury ...	0·85	Middleton Cheney ...	1·5
Towcester ...	0·86	Gretton ...	2·38
Daventry ...	0·87	Northampton ...	2·4

Respiratory Diseases Mortality.—The number of deaths attributed to bronchitis, pneumonia, and pleurisy, together amounted in the administrative County to 560, of which 232 were in the Urban Districts, and 328 in the Rural Districts. Of the total deaths from these causes, 53·4 per cent. were recorded as being children under five years of age ; of these, 60·7 per cent. in urban districts were children under five years of age, and in the rural districts 48·1 per cent. were children of the same age.

The following table shows the death-rate from respiratory diseases per 1,000 of the population for the whole administrative county, and for the combined urban and rural districts respectively, for the three years 1895—97 :—

Areas.	Respiratory Diseases.	1895.	1896.	1897.
Administrative County.	No. of Deaths.	491	414	560
	Rate per 1,000.	2·21	1·84	2·44
Combined Urban Districts.	No. of Deaths.	205	167	232
	Rate per 1,000.	2·28	1·74	2·32
Combined Rural Districts.	No. of Deaths.	286	247	328
	Rate per 1,000.	2·16	1·91	2·54

The mortality from respiratory diseases was, therefore, considerably in excess of what it was in the two preceding years, and as much so in the urban districts as in the rural ones.

The Urban districts, whose death-rate for respiratory diseases in 1897 exceeded the mean rate for the combined urban districts from the same causes, were the Boroughs of Brackley and Higham Ferrers, Finedon, St. James' (N'ton.), Kingsthorpe, Rothwell, and Rushden; the Rural Districts, exceeding their mean rate, were Crick, Hardingstone, Northampton, Potterspury, Thrapston, and Wellingborough.

The Medical Officer of Health for the Finedon Urban District says,—“ Diseases of the respiratory organs other than “ Phthisis were responsible for thirteen deaths, giving a rate of “ 3·7 per 1,000 per annum. This I consider a satisfactory rate “ when one takes into consideration the amount of fog prevalent “ during the last two months of the year.”

The Medical Officer of Health for the Kettering Urban District writes, in reference to the deaths caused by Pneumonia and Bronchitis, that “ A very large number of children have “ suffered from Bronchitis during the latter months of the year, “ and it has again been noticed that many of those attacked have “ been living in houses recently built, and not thoroughly dried “ before being occupied.”

The Medical Officer of Health for Rothwell Urban District says that “ As usual, the list (of cause of death) is headed by “ Bronchitis, for, as pointed out in previous health reports, “ Rothwell stands high (300 feet above sea level) and is exposed “ to cold winds and rain-storms.”

It would appear too to be not unlikely that a considerable portion of the mortality from respiratory diseases was associated with the prevalence, in varying degree, of influenza,—a disease which is especially liable to predispose those attacked by it to subsequent lung troubles.

The death-rate for respiratory diseases varied in the Urban Districts from 0·8 per 1,000 of population in the Desborough District to 4·28 per 1,000 in St. James' (N'ton.). In the Rural Districts, the variation in this mortality was from 0·59 per 1,000 of population in the Gretton District to 4·9 per 1,000 in the Crick District.

From the figures here submitted, and those already given under the subject of Phthisis, it is a matter deserving of particular notice that the Urban District of St. James, which adjoins the County Borough of Northampton, and is a rapidly growing district, has suffered so particularly among its inhabitants from

serious lung affections which have ended fatally. I cannot say whether the remarks of the Medical Officer of Health for the Kettering Urban District, above quoted, are as applicable to the St. James' District as to his own, but it is certain that building is going on rapidly in the St. James' District, and probably houses are frequently occupied in it before they are fit to be.

Arranged in order of their death-rates from Respiratory Diseases, the Urban Districts stand thus:—

	<i>Per 1,000 of Population.</i>		<i>Per 1,000 of Population.</i>
Desborough ...	0·8	Rushden ...	2·6
Wellingborough ...	1·6	Higham Ferrers Borough ...	3·0
Far Cotton ...	1·79	Rothwell ...	3·0
Oundle ...	1·87	Finedon ...	3·7
Kettering ...	1·96	Brackley Borough ...	3·98
Daventry Borough	2·0	St. James' (N'ton.)	4·28
Kingsthorpe ...	2·6		

The position of the Rural Districts in respect of their death-rates from Respiratory Diseases is as follows:—

	<i>Per 1,000 of Population.</i>		<i>Per 1,000 of Population.</i>
Gretton ...	0·59	Towcester ...	2·3
Oxendon ...	0·86	Kettering ...	2·4
Easton-on-the-Hill	1·2	Northampton ...	2·7
Daventry ...	1·7	Potterspury ...	2·7
Brixworth ...	1·88	Thrapston ...	2·75
Brackley ...	1·9	Hardington ...	3·68
Middleton Cheney	1·9	Wellingborough ...	3·97
Oundle ...	2·3	Crick ...	4·9

General Zymotic Mortality.—The total number of deaths attributed to zymotic diseases in the administrative county was 374, of which 206 belonged to the urban districts, and 168 occurred in the rural districts of the county. Under the name “zymotic” I have included mortalities from measles, whooping-cough, and diarrhoea, which are not ordinarily notifiable diseases. Of the total deaths from the zymotic diseases,

76·7 per cent. were recorded as being children under five years of age ; of these, 79·1 per cent. in urban districts were children under five years of age, and in the rural districts 73·2 per cent. were children of the same age.

The following table shows the total general zymotic mortality for the administrative county, and for the combined urban and rural districts respectively, for the three years 1895—97.

Areas.	General Zymotic Diseases.	1895.	1896.	1897.
Administrative County.	No. of Deaths.	304	410	374
	Rate per 1,000.	1·37	1·82	1·63
Combined Urban Districts.	No. of Deaths.	147	223	206
	Rate per 1,000.	1·63	2·32	2·06
Combined Rural Districts.	No. of Deaths.	157	187	168
	Rate per 1,000.	1·18	1·45	1·3

The general zymotic mortality rate was, thus, below the like rate for the year 1896, when there was considerable mortality due to measles.

The Urban districts whose zymotic death-rates exceeded the same mean rate for the combined urban districts were the Borough of Brackley, St. James' (N'ton.), Kingsthorpe, Rothwell, and Rushden. It is worthy of note that, with the single exception of Rothwell, these are districts either adjoining the County Borough of Northampton or which have not as yet acquired official notification of disease, and in the case of St. James', which has the heaviest record, these two conditions are co-existent.

The Rural districts whose like death-rates exceeded the rate for the combined rural districts were Brixworth, Northampton,

Potterspury, and Thrapston, of which the last-named was by far the heaviest sufferer. Thrapston district suffered, however, severely, as indeed though to a less extent did Brixworth, from mortality due to the prevalence of whooping-cough.

The Rural districts had a lower zymotic mortality rate than the Urban districts, and in this respect maintained the character of the two preceding years.

Arranged in order of their death-rates from Zymotic Diseases, the Urban Districts stand thus:—

	<i>Per 1,000 of Population.</i>		<i>Per 1,000 of Population.</i>
Kettering ...	0·4	Wellingborough ...	2·05
Oundle ...	0·7	Brackley Borough ...	2·17
Daventry Borough	0·76	Rushden ...	2·37
Desborough ...	1·1	Rothwell ...	2·8
Higham Ferrers		Kingsthorpe ...	4·1
Borough ...	1·5	St. James' (N'ton.) ...	5·3
Far Cotton ...	1·5		
Finedon ...	1·89		

The position of the Rural Districts in respect of their death-rates from Zymotic diseases is as follows:—

	<i>Per 1,000 of Population.</i>		<i>Per 1,000 of Population.</i>
Middleton Cheney	0·0	Towcester ...	1·1
Oxendon ...	0·4	Gretton ...	1·19
Daventry ...	0·5	Easton-on-the-Hill ...	1·2
Hardingstone ...	0·7	Wellingborough ...	1·28
Brackley ...	0·77	Northampton ...	1·4
Crick ...	0·8	Brixworth ...	1·8
Kettering ...	0·88	Potterspury ...	1·9
Oundle ...	1·0	Thrapston ...	3·2

SPECIAL ZYMOTIC DISEASE AND MORTALITY.

In so far as information is obtainable from the several districts under the Infectious Diseases Notification Act, or from other sources in the districts where that Act has not been adopted,

statistics in respect of zymotic sickness and its fatality are, on such basis, available. But they must necessarily be incomplete for County purposes. There are still six districts in the County which have not adopted the Notification Act, and their united estimated population amounts to 39,028 or 17 per cent. of the estimated population of the administrative county. They are not even grouped together, except for so far as the two rural districts adjoin; had they been, their elimination from the county statistics would have endowed these with greater accuracy. Still, with such material as is afforded by the reports of the district medical officers of health, relatively useful information with regard to the prevalence and fatality of special zymotic diseases in the county may be obtained, and conditions inimical to health indicated thereby be taken into careful consideration.

Small Pox.—It is very pleasing to note that not only was there not a single death from small pox during the year 1897, but that there was also no notification of any case of the disease within the area of the administrative county. It is pleasing to be able to record this fact, but it cannot be regarded as an indication of continuous freedom from the disease.

Scarlet Fever.—This disease appears to have been extremely prevalent throughout most of the districts of the county. The mortality from it was not, however, severe. As many as 1,131 or more cases of the disease were notified or came to the knowledge of the respective district medical officers of health; this prevalence amounted approximately to a sickness-rate of 0·5 per cent. of the total estimated population. The total number of deaths from the disease was 57, or 5 per cent. of the cases; but this fatality was not evenly distributed between the Urban and Rural Districts. The combined Urban districts had a fatality of 6·76 per cent. of their cases, while the Rural districts together suffered only to the extent of 2·57 per cent. of their recorded cases.

In the absence of notification, the Medical Officer of Health for Brackley Borough can only say that there were “some

few cases of scarlet fever," and he records no deaths from the disease.

The Medical Officer of Health for the Borough of Higham Ferrers, in recording 75 cases, with three deaths, says "Scarlet Fever prevailed extensively during the latter half of the year, but the disease was for the most part of a mild type, although there were some severe cases, with three deaths. A special danger attaches to the slight cases, as they frequently do not come under medical observation and in consequence are allowed, while in the infectious stage, to mix freely with other children, and spread the disease widely. There is reason to believe that many cases were due to this cause."

The Medical Officer of Health for the Finedon Urban District writes, "Scarlet Fever broke out in September and became epidemic during the last quarter of the year and will be with us I am afraid for some little time to come." In this District there were 33 notified cases with two deaths.

Although there is no official notification of disease in the St. James' (N'ton.) District, the Medical Officer of Health and the Sanitary Inspector for the district ascertained the existence of 59 cases of scarlet fever. It is left to the imagination what the extent of prevalence was in that district, for, as there were only three deaths from scarlet fever, the disease must have been of a mild type generally. Few will be found to disagree with the opinion of the Medical Officer of Health that, in the absence of notification, "it is impossible to determine with anything like accuracy the prevalence or extent of infectious disease or to check it before it becomes epidemic."

The Medical Officer of Health for the Kettering Urban District says "Scarlatina may be said to have been endemic during the year. Cases have occurred in all parts of the town, and often with no apparent connection with each other. It is probable that this disease has been passed on from one to another, owing to very slight cases not having been recognised by parents, the

“ illness having run its course without any medical advice being
 “ sought. It would be well for school teachers to inform the
 “ Inspector in all cases where any suspicion of this very infectious
 “ disease exists.” As in the case of the St. James’ District, there
 were three deaths among 59 recorded cases.

The Kingsthorpe Urban District contributed the large
 number of 210 cases, with 25 deaths, to the statistics relating to
 scarlet fever, and in respect thereof the Medical Officer of
 Health reports, “ It will thus be seen that there has been a very
 “ large number of cases of Scarlet Fever, the great majority of which
 “ occurred in the Kingsthorpe and Semilong Districts. I found
 “ it necessary to close the Kingsthorpe and St. Paul’s Schools for
 “ a short time until the Midsummer holidays commenced. Owing
 “ to the large number of cases, the amount of work falling on
 “ the Sanitary Inspector has been very heavy, all infected houses
 “ having to be visited and supplied with disinfectants, and after-
 “ wards the rooms disinfected. Up to the present it has been
 “ impossible to carry out disinfection of the houses in a
 “ satisfactory manner, owing to having no apparatus for
 “ disinfecting bedding, &c.; but this I am glad to say will be
 “ remedied when we open our new Infectious Hospital, where a
 “ disinfecting apparatus will be provided.”

Rushden Urban District, with two deaths from scarlet fever,
 and in the absence of notification, can only speculate on having
 had about 100 cases of the disease. This constitutes a considerable
 outbreak, and, in respect thereto, the Medical Officer of Health
 reports as follows:—“ I find that Scarlet Fever appeared in
 “ March and reached an epidemic stage in Oct. and Nov. As
 “ most of the cases occurred in families where children had been
 “ attending school, I suggested the advisability of having the
 “ floors, desks, and forms washed frequently with disinfectants,
 “ also that the school-rooms should be well aired by having all
 “ the windows left open while the children were absent; pointing
 “ out that in the presence of an epidemic condensed air would be
 “ liable to spread the disease. The Council, approving of my

suggestions, directed that they should be forwarded to the “schools. After this had been carried out the fever soon abated.”

The Wellingborough Urban District had six deaths out of 77 cases notified, and the Medical Officer of Health says “It is “difficult to account for most of the cases of scarlet fever, but “the disease has either been imported or caused by children “congregating so much for ‘Treats,’ &c., as well as in Schools. “The great necessity for carrying out more thoroughly a system “of Disinfection is very apparent, even after the mildest cases.”

With regard to the prevalence of scarlet fever in the Rural Districts of the county, it may be said that though there was one death of a child from the disease at Pitsford, yet, because of the absence of notification in the Brixworth Rural District, there is no information as to the extent to which the disease prevailed in it. The disease is, however, reported as having been imported into Pitsford village.

In the Crick Rural District there was but one notification and one death from the disease.

In the Brackley Rural District there were 24 cases but no deaths, and the disease was “practically confined to the villages “of Croughton and Sulgrave, where the disease has been “endemic now for some years.” The Medical Officer of Health also reports as follows :—“In a case of exposure of a child in a public “place while peeling after scarlet fever, I advised the Council to “prosecute the person having charge, with the result that a “conviction was obtained under the Public Health Act, and a “fine imposed, and I think this will do more to render such “persons careful than any ordinary notice.”

The Medical Officer of Health for the Daventry Rural District reports as follows of the extensive prevalence of scarlet fever in his district :—“Scarlatina appeared in 10 of the 27 “Parishes, West Haddon with eighteen cases having the greatest “number ; one isolated case occurred in January, and in April a “child returned from Northampton with the disease. During

“ the remainder of the year cases of a mild type continued to
 “ occur, but at the end of the year there only remained one case
 “ in the village. The schools were disinfected during the
 “ summer Vacation. Thirteen cases were notified from Long
 “ Buckby; they were nearly all the continuation of the outbreak
 “ which occurred in that village during 1896, twelve of these
 “ cases falling during the first few weeks of the year. The
 “ remaining case was an isolated one in the middle of October.
 “ Ten cases were notified from Everdon: the disease was brought
 “ to the village in October by a teacher from the Kingsthorpe
 “ school, who was sent to her home in Everdon ill, and it was
 “ then found out she was suffering from scarlatina. Fortunately,
 “ it did not spread to any great extent. Seven cases were notified
 “ from Newnham, and on visiting the village, I found very great
 “ carelessness amongst many of the inhabitants, many cases being
 “ so mild that no medical man was called in. I even found children,
 “ who had partly recovered, going about the street desquamating,
 “ the parents, as one generally finds in such cases, pleading ignorance
 “ of what their child was really suffering from. I had no other
 “ course but to close the schools, and they remained closed for
 “ nearly six weeks from October 14th to November 22nd; the
 “ parents were all cautioned, and copies of the 126 Section of the
 “ Public Health Act 1875 distributed about the village. Six
 “ cases were notified in Weedon, partly the continuation of the
 “ outbreak that occurred there in December, 1896; it was in
 “ Weedon that the only death from scarlatina throughout the
 “ District took place, and this was a child aged 5, and occurred
 “ on the first day of the year. Owing to these cases, the
 “ Christmas holidays were extended a fortnight, and the schools
 “ re-opened on January 25th. Two mild cases occurred in both
 “ Staverton and Winwick, and single cases in Braunston, Watford,
 “ and Whilton; the Watford case was a child attending the
 “ West Haddon Schools.”

The Hardingstone and Northampton Rural Districts both
 afford further illustrations of extensive prevalences of the disease
 due to its importation from elsewhere. The Medical Officer of

Health for these districts reports of Hardingstone District that “ 60 cases of scarlet fever were notified against 33 in the previous “ year. No less than 19 of these cases occurred at Collingtree, “ where the disease has been very prevalent, but fortunately of a “ mild type. The first two cases were imported from Kettering, “ but it would be difficult to say that every other case arose from “ these, which were promptly isolated at the Infectious Hospital. “ There has been a very extensive and general epidemic of scarlet “ fever in the town of Northampton during the year, and the “ intercourse between your villages and this town is so frequent, “ that I anticipated an epidemic of this disease, and am only “ surprised that it was not more general. Hardingstone (9 “ cases), Piddington (8 cases), Yardley Hastings (7 cases), and “ Roade (7 cases), were the other villages in which most of the “ other cases occurred, but it did not spread in these as at Col- “ lingtree. The fatal case of scarlet fever took place in a family “ at Piddington in which there were several other cases.”

Of the Northampton Rural District he says that “ there “ were 43 cases of scarlet fever notified, viz.:—19 in the Abington “ district, 8 in the Duston district, and 16 in the Kislingbury “ district. This is a larger number than has been notified for “ many years, but scarlet fever has been so very prevalent in “ Northampton, and most of the cases were traced to contagion “ from that town, that I think it is fortunate the disease did not “ spread widely throughout our villages. Abington is answer- “ able for 13 of them, and most of them were children who were “ attending a Board school in Northampton. In Weston Favell “ there were 6 cases which occurred almost simultaneously, and “ there was no further spread. In Dallington and Duston again “ it did not spread beyond the families first attacked. In “ Bugbrook there were 11 cases, the first of which was imported “ from Northampton, and after the first batch very few others “ fell.” The only death appears to have been a child under five years of age in the sub-district of Abington.

There were only 2 cases at Burton Latimer in the Kettering Rural district; and, of the 15 cases learnt of in the non-notifying

district of Oxendon, 2 were at Marston Trussell, 4 at Sibbertoft, 3 at Stoke, 4 at Weston-by-Welland, and 2 at Welford. In the Potterspury Rural district 21 cases of scarlet fever were notified, "scattered throughout the district, and mostly due to primary cases having eluded detection at the outset." In the Middleton Cheney Rural district also there were 8 cases of the disease; "Four occurred at Chipping Warden in September and October, and there is but little doubt they arose from contact with children on a visit from London. The other 4 were at Upper Boddington in November and December, but the cause of these cases could not be definitely ascertained." The disease was the cause of no mortality in any one of these four rural districts.

There were outbreaks of scarlet fever of a mild type in the Nassington, Warmington, Fotheringhay, Kingscliff, and Lutton villages of the Oundle Rural District. There was also an outbreak of a severe type at Thorp, which resulted in the only death from the disease during the year in the district, as well as a single case, which was very successfully isolated, in the Railway Station house at Elton.

Before the separation of Raunds from the Rural District of Thrapston, Scarlet fever was imported into that place. It seemed to be of a peculiarly malignant character, and special precautions were taken to disinfect the house after a case which unfortunately proved fatal. Some other cases occurred, but the disease did not spread to any great extent. A few cases of the disease also occurred at Thrapston due to importation from Islip, one at Stanwick which was traceable to Raunds, and a few towards the close of the year at Ringstead. Cases also occurred at Islip, arising in connection with cases in one family that had not been notified, but were allowed "to go to school in the peeling stage of the disease." Legal proceedings were accordingly instituted, and the father of the children was fined by the Magistrates for not complying with the terms of the Infectious Diseases Notification Act.

The 77 cases of the disease reported in the Towcester Rural District, were distributed among the following places:—Blakesley, Whittlebury, Litchborough, Gayton, Towcester, Cold Higham, Blisworth, Stoke, and Silverstone. The Medical Officer of Health remarks that “Scarlatina is the Sanitary bugbear of the district, and crops up in the most annoying way.”

Diphtheria.—There were 98 cases of this disease notified in the administrative county during 1897: of these 23 were in urban districts, and 75 in rural districts. There was a total mortality of 20, giving a death-rate of 20·4 per cent. of the cases: the rate for the combined urban districts was 13·0 per cent., and for the combined rural districts was 22·6 per cent. These calculations are, however, subject to modification. For instance, there is no means of guessing the approximate number of cases of Diphtheria in the Brixworth Rural District, and yet that district contributes a total mortality of 5 from the disease. Again, it is not unusual to include deaths from membranous croup with those directly attributed to diphtheria, but to do so in the absence of complete notification of membranous croup throughout the county would either exaggerate or undervalue the significance of the diphtheria mortality. As a matter of fact, for the year 1897, the number of cases of membranous croup set down as having come to the knowledge of the several Medical Officers of Health is less than the number of deaths recorded from the disease in both the combined urban and rural districts. It is not safe, therefore, even to hazard an opinion as to what was the rate of mortality from so-called “membranous croup,”—a disease which many do not distinguish as other than diphtheria occurring in a mild degree. Under all these circumstances, the statistical remarks on diphtheria prevalence and mortality can only be accepted with the greatest reserve.

Some of the records with regard to the occurrence of diphtheria in the county are interesting and worthy of consideration. For instance, the Medical Officer of Health for the Borough of Higham Ferrers sounds a note of warning in reference

to the single case coming under his observation in that district :—
 “ There was only one case of diphtheria during the year, caused
 “ probably by sewer emanations, as it occurred in a house with a
 “ W.C. directly connected with the sewer, and which has to
 “ depend upon flushing by hand ; an arrangement that obtains
 “ in many instances in the Town, but is altogether unsatisfactory
 “ and dangerous to health.”

The Medical Officer of Health for the Oundle Urban District says that “ In March two cases of Diphtheria occurred in North
 “ Street in the same house. Sanitary defects were found to
 “ exist, and upon the facts being reported to the Council the
 “ same were duly remedied.”

Similarly, the Medical Officer of Health for the Rushden Urban District reports that “ In June there were three cases of
 “ Diphtheria resulting from sewer gas. In one instance the
 “ sink drain was in direct communication with that of the sewer.
 “ In the other case the children had been playing in the yard
 “ while the drain which was out of order was under repair. At
 “ this period the manholes of the main sewers were very offensive,
 “ and I advised their being systematically flushed, and at the
 “ present time we have a flushing van in use.”

Of the three cases which occurred in the Brackley Rural District, it appears that “ two were imported,” and there was no mortality.

As an unpleasant contrast to this condition of things, it is to be observed that in the Brixworth Rural District, where there is no official notification of infectious diseases, there is no reliable estimate of the prevalence of either diphtheria or membranous croup, and yet under these names six deaths are recorded. The Medical Officer of Health reports that there was an outbreak of “ Infectious Throats ” at Spratton, as to which he says “ on this
 “ occasion I visited the village with a chosen committee and the
 “ Sanitary Inspector. We found the ventilation of drains in-
 “ efficient, and more frequent flushings required owing to the

“long continued drought, both of which insanitary conditions “have since been rectified.” In respect of the two fatal cases of diphtheria at Coton village, he says “I found a bad drain from “which sewage matter was no doubt contaminating the subsoil “under the floor of the house in which the cases occurred,” and later on he reports that the neighbouring school at Guilsborough village was “closed owing to diphtheria.” It ought not to be regarded otherwise than as a most unsatisfactory condition of affairs that a rural district like Brixworth, containing something like thirty-six parishes, should neglect to provide itself with the machinery for obtaining more precise knowledge of the onset and extent of prevalence within its area of such a dangerous and infectious disorder as diphtheria. It is not only a serious matter for the inhabitants of such a district themselves, but it is one which is liable to reflect injuriously on the sanitary credit of the county within which the district is situated.

The case of diphtheria in the Daventry Rural District was a very mild one, the diagnosis only being positively determined by bacteriological examination; and of the two occurring in the Hardingstone Rural District, one was imported from the town of Northampton and the other was a very mild case of the disease.

The three cases of diphtheria in the Kettering Rural District “were notified from one house at Cottingham” and all recovered.

There was, however, a serious outbreak of diphtheria during the year at the village of Harpole, in the Northampton Rural District, and, in respect of this, the Medical Officer of Health has reported as follows:—“I regret to report a serious outbreak of “diphtheria at Harpole, where no less than 40 cases have been “notified, and five deaths have occurred from that disease. The “outbreak commenced in February, when several cases occurred “simultaneously in different parts of the village. On visiting “them I found that they could not be accounted for by the milk “supply—the water supply—nor the sanitary arrangements, as “they were scattered over the village and could have no common “origin in these particulars. The first cases, however, had these

“points in common that they were all school children and had
 “been attending the Harpole Schools. These Schools are, in my
 “opinion, old, crowded, and badly ventilated, and do not at all
 “come up to the sanitary requirements of the present day.
 “There are no playgrounds, and the closets are only a few feet
 “from the doors opening out of the school-room, and are placed
 “in a very confined space. The Schools were closed, and, after
 “that was done, the other cases that followed were almost
 “entirely confined to the families first attacked. The Schools
 “remained closed for more than six months, but no steps were
 “taken to put them in a sanitary condition. On the approach
 “of Winter, as the question of the education of the children
 “was becoming a public scandal, your Authority was asked to
 “allow the schools to be re-opened. After the closets had been
 “cleaned out, disinfected and ventilated, and the schools cleaned,
 “leave to re-open them was unfortunately given, and then in a
 “very short time another batch of cases arose, mostly in school
 “children, so the schools were at once ordered to be again closed,
 “and must so remain till important alterations and re-arrange-
 “ments have been made. The school having been closed by this
 “Authority as an insanitary building, it is for the Education
 “Department to see that some proper steps are now taken to
 “provide for the education of the children which has been almost
 “in abeyance during the year.” There was no other outbreak
 of diphtheria during the year in the county approaching this one
 at Harpole in either importance or severity, with the single
 possible exception of the outbreak in the Guilsborough village
 of the Brixworth Rural District.

The cases reported as having occurred in the Thrapston
 Rural District gave rise to no special comment; but of those
 occurring in the Towcester Rural District it would appear that
 three of them were “of the laryngeal type and unhappily fatal,”
 and the fourth was of a milder type and recovered. In reference
 to one of the fatal cases of Laryngeal Diphtheria, the Medical
 Officer of Health considers that it “was due to conditions caused
 “by the surrounding privies with cesspits, and the overfilled and

“uncovered ashpits into which household slops were thrown.” This was at Greens Norton, and the Medical Officer of Health appears to have properly called the attention of the District Council to the urgent necessity for better and more systematic scavenging arrangements in the several villages of the district.

The cases occurring in the Wellingborough Rural District were distributed mainly in and around Earls Barton, but apparently were not of such a nature as to call for special remarks concerning them.

Enteric Fever.—There was happily an absence of any serious epidemic of enteric-fever in the county during the year 1897. There were 99 cases, with 12 deaths, in the Urban Districts, and 45 cases, with 11 deaths, in the Rural Districts, which were notified or came to the knowledge of the district Medical Officers of Health. These represent percentage death-rates of 12·1 and 24·4 respectively, showing, therefore, greater fatality of disease in the Rural than in the Urban Districts.

The cases occurring in a certain district of the Borough of Brackley led the Medical Officer of Health to draw the attention of the Council to the insanitary condition of the locality, “which “was chiefly due to the number of pigstyes there, and the “consequent accumulation of filth and contamination of the “surface and subsoil.” While making orders for the abatement of these nuisances, the Council do not appear to have enforced their orders by any further proceedings, and presumably the condition of things reported on was allowed to remain as before. This can hardly be considered as a satisfactory vindication of the laws of health.

The cases occurring in the Borough of Daventry appear to have been caused by the drinking of well-water, which, on analysis, was found to be “seriously polluted with drainage “matter,” and, in respect of the cases arising in the Desborough Urban District, a like cause of illness was suspected. In the reports on both of these districts the hope is expressed that the

improvement of the public supply of water to them will receive attention.

In the Urban District of Finedon the cause of two cases could not be discovered, but in the third case it is stated that "The occupation of the man, who was watchman in connection with the Sewage scheme, afforded him every opportunity to contract the disease."

The Medical Officer of Health for the Kettering Urban District reports that "Out of eleven cases there were ten different localities spread over eight months of the year. The drinking water was repeatedly tested in every case, the private drains and the public sewers in each locality were repeatedly flushed, and disinfectants freely supplied and made use of." In six of the cases no cause of illness was discovered, in one of them insanitary conditions were found, in two others the discovery of impure drinking water was made, and the remaining two cases were probable importations from Desborough and Melton Mowbray respectively.

The existence of Enteric Fever in Raunds appears to have been the continuation of an unfortunate history in that respect; but there appears to be good ground for believing that the sanitary needs of that newly-formed urban district are being appreciated, and that necessary improvements will be carried out.

The report on Enteric Fever in the Rushden District by the Medical Officer of Health affords an excellent illustration of the common-place fact that this disease is most readily caused by specifically polluted water:—"In July there was a case of Typhoid Fever in West Street. The child returned from Little Addington (where she had been on a visit for several weeks) with the fever. The well-water she had been drinking at Rushden was condemned as being unfit for use some months previously. In August three fresh cases occurred in the same house. About the same time a boy, Dix, in the Washbrook Road, also had the fever. He had been at work near West

“Street. Also a boy named Gilbert, of Melbourne Terrace,
 “Victoria Road, near West Street. He had been drinking the
 “well water that supplied Melbourne Terrace. At the time I
 “tested it, I failed to discover any organic matter, but, as I have
 “previously pointed out, surface water is liable to become con-
 “taminated at any moment. In October there were four fresh
 “cases:—1 in West Street, the 2nd in Washbrook Road, the 3rd
 “in Melbourne Terrace, and a 4th in Delve Close; I condemned
 “the water here some time back and had a notice to that effect
 “on the pump. The last patient had previously been doing
 “washing for the Typhoid cases in West Street, where she
 “doubtless contracted the fever. In November there were four
 “fresh cases, three in South Terrace, and one in Washbrook
 “Road where there were already some cases. The fresh cases
 “in South Terrace were doubtless from drinking the water which
 “had been condemned as decidedly bad. The insanitary con-
 “dition of this place I brought to the notice of the Council a few
 “months since, and pointed out that there were a number of
 “Piggeries in dangerous proximity to the well. In December
 “there were 10 fresh cases, all located in Melbourne Terrace,
 “Victoria Road. The water which I tested was bad. This had
 “been supplying the whole terrace. These cases show the
 “danger of drinking surface well water. Another case, a boy
 “named Clark, of Moor Road, had been drinking the water
 “that supplied the above cases. With this, the fever seems to
 “have ended. Had the above availed themselves of the town
 “water, most of the Typhoid cases would not have occurred.”

So also in the Wellingborough Urban District, the Medical Officer of Health attributed such cases as were not due to importation of the disease to insanitary conditions, “more particularly
 “of impure water.”

In the Brixworth Rural District, where the Notification Act is not in force, there was one death from this disease.

Of the five cases in the Daventry Rural District, one was imported, and another was a man who had been recently employed at some drainage works.

There was only one case in the Easton-on-the-Hill Rural District, and that was imported from London.

Only one case occurred in the Hardingstone Rural District.

In the Kettering Rural District, there were two cases, one of which was imported from Rothwell

The Medical Officer of Health, for the Northampton Rural District, states, "That there were only two cases of Enteric Fever notified during the year, one of which was due to defective drainage. The outbreak of Enteric Fever at Kislingbury, where 48 cases were notified in 1896, seems quite at an end, as no cases of this disease have been reported from that village."

There were two cases in the Oundle Rural District, arising, one, probably from drinking water from unprotected wells which had become polluted by surface water, and the other possibly from the drinking of impure water, 20 miles away, while cycling.

There were 26 cases and 5 deaths from Enteric Fever in the Thrapston Rural District, 16 of the cases and 4 of the deaths occurring at Raunds. The following is an extract from the report of the Medical Officer of Health, in respect of the cases at Little Addington:—"In July, a young man working at Raunds fell ill with Typhoid in this village, the case was not easy to recognise, and consequently was not notified at the commencement, consequently proper precautions were not taken, and the inhabitants of the next house using the same closet were all attacked, one case proving fatal. Investigations were made respecting the public well not far from the infected houses; this was found to be in an unsatisfactory condition and liable to contamination. Alterations were made, and the last analysis gives excellent results. Two cases of fever were also seen in the house of a man named Cox. The want of an Isolation Hospital was much felt in this instance, as the house was in a bad state and there was no proper nursing. The girl Cox was afterwards removed to the Workhouse. In these cases, and

“also in the cases at Ringstead, which were contracted from this outbreak, I advised that a systematic system of removing all excreta outside the village be adopted.”

Only two cases occurred in the Towcester Rural District, one from drinking ditch water whilst engaged on field work, and the other probably from some source of infection in Northampton.

Of the 20 cases in the Wellingborough Rural District, two proved fatal; but the individual circumstances of the cases have not given rise to any special mention of their association with disease causes, save that the whole number appear to have been spread over all the three main divisions of the district.

Puerperal Fever.—There were only five cases of puerperal fever with three deaths in the Urban Districts, and three cases with one death in the Rural Districts. There are no special comments on these cases to be recorded, and the number of cases is not unsatisfactory.

Erysipelas.—There were reported in the Urban Districts 98 cases of Erysipelas with two deaths, and in the Rural Districts 94 cases with four deaths. These represent percentage death-rates of 2·04 for the Urban Districts, and 4·25 for the Rural Districts. The number of cases is decidedly large for the population, though the death-rate per number of cases is low. Under the heading of “erysipelas” it is intended, under the Infectious Diseases Notification Act, that both the traumatic and idiopathic forms of the disease should be included; but, undoubtedly, very great care should be exercised in the diagnosis of the disease for notification purposes.

Measles.—It is noteworthy that though in the year 1896 there was a large mortality from this disease in the county—amounting to 184 deaths—the year 1897 shows an almost equally remarkable freedom from the disease. In the combined Urban Districts there was not a single death from measles, and in the combined Rural Districts there were only three deaths, of which one occurred in the Brixworth Rural District, and the other two

in the Towcester Rural District. It must not be forgotten, however, that measles is a disease which occurs in almost every place, as it were mechanically, in an epidemic form every two or three years, and is scarcely manifested in the intervals during which the fresh susceptible population is being born and reared. Thus, while the county has been much freer from the disease during the year 1897 than it was in 1896, it is far from unlikely that a renewed general prevalence of measles will be experienced after the present year. Although no deaths occurred in the Oxendon Rural District from the disease, the Medical Officer of Health reported that "There was a considerable outbreak of measles, at Sibbertoft, in January; and also at Farndon, in June, and the School was closed at the latter place."

Whooping Cough.—There was a distinct increase in the prevalence of this disease as compared with the two previous years. In 1895 and 1896, the total number of deaths from whooping cough was set down as being 41 and 44 respectively; in 1897, the total number of deaths was 141, 65 deaths being in Urban Districts, and 76 deaths in Rural Districts. Among the Urban Districts, the Borough of Higham Ferrers and the Oundle District are the only ones which contributed no mortality from this disease, and, among the Rural Districts, the only non-contributory ones was Crick, Gretton, and Middleton Cheney. The school at Nassington in the Oundle Rural District was closed on account of the prevalence of whooping-cough, as also that at Little Addington in the Thrapston Rural District. The heaviest mortalities from the disease appear to have been in the Thrapston Rural and the Kingsthorpe, Rushden, and Wellingborough Urban Districts.

Diarrhœa.—The mortality from diarrhœa has appeared to vary considerably in the county during the last few years. In 1895, the total deaths were 131; in 1896, they were 66; and in 1897, they amounted to 110. Unfortunately, the reports of the district medical officers of health do not afford information which would enable the distribution of these deaths to be made according to

season ; but, inasmuch as 96 out of the total 110 deaths were of children under five years of age, it is probable that they are mainly indicative of the prevalence of summer diarrhoea. In the Urban Districts out of a total of 70 deaths, 66 were children under five years of age, and in the Rural Districts, 30 out of the 40 deaths were in the same age-class. Fatal diarrhoea was absent from the Boroughs of Brackley and Higham Ferrers, and from the Rural Districts of Hardingstone and Middleton Cheney. It was most fatal in the St. James' (N'ton.) Urban District, and considerably so in the Kingsthorpe Urban District, the rates being 3·08 and 1·01 per 1000 of their estimated populations respectively. These are both rapidly growing districts adjoining the County Borough of Northampton, and the suspicion arises that great care will need to be exercised in the supervision of building operations within them. In this connection, it is to be observed that the relation of summer heat to diarrhoea is far from being a mere association of illness with increased atmospheric temperature. The investigations of the late Dr. Ballard have carried the matter much further and more importantly so, emphasising the necessity—if indeed emphasis were needed—for clean and unpolluted soil on which the dwelling stands. Given a soil which is sufficiently loose and permeable to air and water, together with that organic matter which is so easily procurable, and so readily absorbed by the soil, within the areas of populous places, and the vitality of the micro-organism of diarrhoea will be sustained; add to these, a suitable temperature and degree of moisture of the earth, and the multiplication of the organism takes place. The requisite degree of moisture only amounts to slight dampness in the surface soil, and the temperature of the earth required is 56° Fahr. at a depth of four feet. By varying physical actions the micro-organisms may become air-borne and gain access to food supplies, especially to milk, which, as it is so common a food-supply for infants, is usually stored in some quantity. Whenever, therefore, the conditions for activity of the micro-organism are complete, then it is that the place of storage for the milk or other food for children comes to be a matter of first importance. In the cottages of the poor, it is usually stored in

wretched places, sometimes in dark closets or in pantries opening on to confined yards, in places, that is, where it is exposed to emanations from organic waste and polluted soil. Under such conditions, the micro-organism finds a very suitable medium for the production of that chemical poison which occasions the summer diarrhœa that is so fatal to infants. It is, therefore, important in all districts where readily permeable soil exists to avoid all risks of soil-pollution by soakage from accumulations of organic filth; to ensure that, as provided for in the Public Health Acts Amendment Act, 1890, no new building shall be erected on ground which has been filled up with any matter impregnated with foecal, animal, or vegetable matter, until this shall have been removed or rendered innocuous; and to provide, by the adoption of effective bye-laws, for the laying of impermeable foundations for all dwelling-houses. By such means it is more than conceivable, in the light of our present knowledge, that the deplorable diarrhœal mortality of infants in this country may be largely reduced.

It would be of undoubted service if, in this county, observations in different districts or parts of districts were taken and recorded of the rise and fall of the temperature of the earth at the depth of four feet, as is done now in so many towns of the country.

INFECTIOUS DISEASE NOTIFICATION.

I have already referred incidentally to the absence of infectious disease notification in several of the districts of the administrative county.

The Districts which are without such notification are—

- | | | | |
|----|------------------------------------|-------|---|
| 1. | Borough of Brackley. | | |
| 2. | St. James' (N'ton) Urban District. | | |
| 3. | Oundle | „ | „ |
| 4. | Rushden | „ | „ |
| 5. | Brixworth | Rural | „ |
| 6. | Oxendon | „ | „ |

I do not know all the reasons for these several districts refraining from taking their share in the scheme for securing uniformity of public health administration in the county ; but it is certain that something is due from them on that score, whatever may be thought of their obligations within their own individual areas.

It may be of interest, however, to point out that the advantages likely to be derived from the Notification of Infectious Diseases were recognised by local sanitary authorities long before any attempt was made at systematic legislation on the subject. The first town to secure these advantages was Huddersfield, and it obtained them by means of a private Act in 1876 ; then the town of Bolton followed suit in 1877, and, by 1888, there were some 40 or more cities and towns in the country which, *at the expense of private Bill promotion*, had acquired rights to notification of infectious diseases within their boundaries.

In the year 1888, a Bill for the Compulsory Notification of Infectious Diseases was introduced into the House of Commons by certain Members of the House, and was actually advanced as far as the second reading ; but it was withdrawn before the close of the session.

In the year 1889, a Notification Bill was promoted by the Government, and became law. This gave local authorities the power to enjoy the benefits of notification without their going to the expense of promoting private improvement Bills for the purpose. This Act made notification of infectious diseases *compulsory in London but optional in the Provinces*.

Whatever the reason was for this distinction between the Metropolis and the Provinces, it is a fact that, by March 1892, eighty per cent. of the provincial population of England and Wales had placed itself *voluntarily* under the provisions of the Act. But I am happily enabled to put the facts of voluntary adoption in a more recent light, and to make a more exact comparison of the districts within the administrative County of

Northampton with England and Wales than in the terms of the parliamentary returns of 1892.

On March 22nd 1898, the President of the Local Government Board, was able to report, in answer to a question put to him in the House of Commons, that the number of districts in which the system of notification was in force was 1,649, with a population of nearly 28,000,000, out of 1,821 districts with a population of 29,000,000.

In other words, only $9\frac{1}{2}$ per cent. of the districts and $3\frac{1}{2}$ per cent. of their population were without notification of infectious disease.

On the other hand, it has to be recorded that, in the administrative County of Northampton, 20 per cent. of its districts and 17 per cent. of its population are without disease notification.

By the failure of these districts to adopt the Infectious Diseases Notification Act, not only is the registration of infectious disease in the County rendered incomplete, but they themselves are deprived of much valuable information which would enable them to take *timely* precautionary measures against the spread of infection within their boundaries.

It is greatly to be hoped that this matter will be taken into serious consideration by the Councils of the six Districts named during the present year, and that they will take steps to adopt the Act at an early date.

HOSPITAL ACCOMMODATION FOR INFECTIOUS DISEASES.

In a few of the reports of the district medical officers of health the subject of hospital isolation of the infectious sick is specially referred to. It will be noted on reference to Table C. of this report that the number of districts having hospital accommodation of their own, or providing by arrangement with some other district for the isolation of cases, is relatively small. It is remarkable also that the percentage of notified cases that

were afforded isolation in hospital was extremely variable in the different districts, and most meagre in the total amounts for the combined urban and rural districts.

It is gratifying to find, however, that the benefits of hospital isolation are duly recognised by several of the district medical officers of health, and are referred to by them in their reports. Thus, for example, the Medical Officer of Health for the Borough of Higham Ferrers says, "In the absence of efficient means of isolation and disinfection, it is impossible to prevent the spread of scarlet fever." The Medical Officer of Health for the Finedon Urban District, in reference to the epidemic of scarlet fever in that district, adds, "We shall, as you know, be always more or less at the mercy of these outbreaks until we possess a proper isolation hospital, and are so able to nip the disease in the bud." The Medical Officer of Health for the Kettering Urban and Rural Districts carefully records the fact that "The 'Joint Hospitals' have been freely used for this disease"—scarlet fever—"almost continuously, and with great success, care has been taken to keep patients in Hospital long enough to make their return safe, and in no instance has the disease spread from those who had been isolated there. This Report shows that a large proportion of the cases notified took advantage of the Hospitals." Again, and somewhat similarly, the Medical Officer of Health for the Hardingstone Rural District reports that "The infectious hospital has been again in almost constant use during the year, and all the patients admitted were suffering from scarlet fever. In my opinion, the Hospital has very much helped to prevent the spread of disease in some villages. In Hackleton, Brafield, and Castle Ashby, the disease was limited to one family, entirely, I believe, by their prompt isolation. This is the chief use of such a Hospital, by prompt removal of the first cases in a district to limit the spread of the disease, but I much doubt the utility of treating a very general outbreak, as at Collingtree, by removing all the cases to Hospital, since it overfills the wards, and, in a small building like ours, must often keep

“out those first cases in other villages where its use would be “much greater.” The Medical Officer of Health for the Thrapston Rural District very properly reports, in reference to a case of fever, that “The want of an Isolation Hospital was much “felt in this instance, as the house was in a bad state, and there “was no proper nursing;” but the Medical Officer of Health for the Kingsthorpe Urban District is in the happy position of being able to write as follows:—“I must congratulate the Council on “the steps that have been taken for providing a hospital for the “isolation of infectious cases. It is a want that has been very “much felt in the past, and I have no doubt it will be a valuable “aid to us in checking epidemics of a dangerous character in the “future.” The Medical Officer of Health for the Potterspury Rural District is the only one who strikes an adverse note on the subject; but that appears to be solely in reference to his particular district, and I have no doubt that the facts on which his view is based will prove to be exceptional.

The utility of an isolation hospital in a more or less crowded urban district is beyond dispute, and it may indeed be regarded as a public health necessity in these days. On the other hand, the circumstances in which rural districts are placed are more complex, and at least one of their difficulties is illustrated in the quotation from the annual report of the Medical Officer of Health for the Hardingstone Rural District. It is rarely possible for the Council of any single rural district to build and maintain a hospital of such dimensions as will enable it to not only receive the bulk of cases—as of scarlet fever—occurring in one or more villages, but also to isolate the earliest cases occurring elsewhere. But it is possible for two or more districts,—as the Kettering Urban and Rural Districts,—to enter into combination for the erection and maintenance of a “Joint Hospital,” which shall be capable of meeting the requirements of the whole area. It was in this view of the case that the Isolation Hospitals Act of 1893 was passed. By this Act, power is given to the county council, on application being made to it, to provide for the establishment of isolation hospitals. The application to a county council for the

establishment of an isolation hospital may be made by any one or more of the authorities having public health jurisdiction in the County, or the application may be made by any number of rate-payers, not being less than twenty-five, in any contributory place as defined by the Act. The application has to be made by petition, and has then to be considered by the county council. If the council is satisfied that a *prima facie* case has been made out for a local enquiry, one must be held by the county council. The county council may also direct their Medical Officer of Health of the county to make enquiry as to the necessity of any particular district possessing an isolation hospital, and, in the event of his reporting that such an hospital ought to be established, may take the same proceedings as if a petition had been presented by a local authority. The Act further provides for the establishment of "hospital districts" and committees of management, and other matters pertaining thereto, and has up to now proved useful in several counties where it has been put into operation. Its applicability to the needs of Northamptonshire is a matter that must come up for consideration at some future date.

ZYMOTIC DISEASE INVESTIGATION.

It is certain that the enquiries made by a Medical Officer of Health or a Sanitary Inspector into individual occurrences of infectious disease may be made much more complete, and useful for subsequent reference, if they be conducted throughout a county upon some definite basis, and on a more or less uniform plan.

I have noticed in several of the reports of the District Medical Officers of Health a complaint that it is difficult to state the ages of the infectious sick, owing to the forms for notification of disease not providing for the statement, by the medical attendant, of the age of the patient whose illness is notified. It is no doubt in part owing to this that in several districts the division of infectious cases into the two age-groups of below and above five years of age in Table B. is incomplete.

Special Report on Case :—

Special Report on Sanitary Condition of Premises : —

Dated this

day of

189

Signed,

Inspector.

Notified Disease.

RURAL DISTRICT OF HARDINGSTONE.

Name

Occupation

Age

Address

Place of Work or School

Last at Work or School

Date of Rash or First Illness

Number in Family

State of House

Number of Sleeping Rooms

Number Sleeping in each Room

Date of Notification

How Isolated

Nursed by

Other Duties of Nurse

Water Supply

Milk Supply

Closet Accommodation

Probable Source of Infection

Special Report on Case :—

Special Report on Sanitary Condition of Premises :—

Nuisances requiring Removal :—

Dated this

day of

189

Signed,

Sanitary Inspector.

After notification of a case of infectious disease a visit is of course made to the infected house by the Medical Officer of Health or by the Sanitary Inspector,—usually by the latter, who should obtain as complete information of the case as possible for the former in the first instance, and furnish him with it.

At the same time, the Sanitary Inspector has through disease notification a most valuable means for bringing to light the existence of glaring sanitary defects, by a careful examination of the premises at which the case is notified to exist.

Under these circumstances, I have drawn up a form which shall fulfil the requirements, not merely of immediate information to the Medical Officer of Health, but also of a Register of Zymotic Sickness for the Sanitary Inspector. These forms, being prepared as a single sheet for each case, admit of filing in book form, and of being properly indexed, so that they can be referred to at any time. And another matter for consideration is that, each sheet being a complete Register of each case and the premises at which it exists, book-keeping by both the Medical Officer of Health and the Sanitary Inspector is facilitated to an important extent.

The first of the forms now appended is that which I suggested to the Medical Officer of Health for the Wellingborough Urban District, and the second is the modification by the Medical Officer of Health for the Hardingstone Rural District; it seems to me that either form will facilitate disease investigation and the keeping of records relating thereto, and may serve usefully as a sample for adoption in other districts of the county.

VACCINATION.

The report of more than one District Medical Officer of Health draws attention to the neglect of Vaccination in the County.

The Medical Officer of Health for the Finedon Urban District says, "I may state here that no babies are vaccinated in the township, and have not been for the past five or six years."

The Medical Officer of Health for the Wellingborough Urban District remarks that "The compulsory clauses of the Vaccination Acts are still in abeyance in this District," and the Medical Officer of Health for the Daventry Rural District adds that "The Vaccination laws, I regret to say, are still greatly in abeyance."

More fully, the Medical Officer of Health for the Towcester Rural District reports as follows:—"In again recording an immunity of the district from Small-Pox, I cannot but express the hope that some settlement may be arrived at either by instructions from the Local Government Board, or otherwise, with regard to the Vaccination question. Vaccination officers are required by contract to attend stations at particular times provided with vaccine to vaccinate children who are never brought. This is a ridiculous and unreasonable position which ought to be terminated."

Attracted by these remarks, I have been led to refer to one of the latest returns of the Local Government Board with regard to vaccination. Taking the Report of the Medical Officer to the Board for 1896-97, I find, on page 13 of the Report, returns for the year 1894 in respect of Vaccination of children whose Births were registered in the year 1894.

Excluding the Peterborough Union, which is no part of the administrative County of Northampton, I find that, with the single exception of Oundle, there was no Union in Northamptonshire in which during 1894 there was less than 20 per cent. of children not accounted for in respect of vaccination, and that

the percentage of unaccounted cases varied from 20 per cent. in the Daventry Union to 88·0 per cent. in the Wellingborough Union. In the Brackley, Thrapston, Northampton, and Kettering Unions, the percentages were respectively 76·6, 79·2, 83·3, and 84·1.

If these percentages are being maintained, or anything approaching thereto, at the present time, the outlook for Northamptonshire in respect of small-pox protection is far from being attractive. There can be no desire to see such consequences of vaccination-neglect fall on any of the manufacturing centres of the county as have in recent years fallen upon other towns in the country, nor, indeed, the enormous expense to the local rates which must ensue in coping with an epidemic of the disease whenever it arises. Many advocates of the theory that vaccination is an unnecessary proceeding, contend that the lessened fatality of small-pox is due to improved sanitation and not to vaccination, but this has been disproved by the plainest facts, and I should regret to see the falsification of the contention emphasised by any inroad of small-pox to this county while the children within it have not been afforded that protection to which they are entitled but which is withheld from them.

Much is hoped for, in the direction of lessening opposition to vaccination, from increased facilities for vaccination with calf-lymph, and in other ways which are based upon the recommendations of the Royal Commission on Vaccination, and, when these facilities are afforded, it is to be hoped that advantage will be taken of them more generally throughout the county than appears to have been the case hitherto. In the meantime, it appears to be desirable that very general attention should be paid to the following opinions of the majority of the Royal Commissioners in respect of the influence of Vaccination upon Small-Pox.

“(1) That it diminishes the liability to be attacked by the
“ disease,

- “(2) That it modifies the character of the disease, and
 “renders it (*a*) less fatal, and (*b*) of a milder or less
 “severe type.
- “(3) That the protection it affords against attacks of the
 “disease is greater during the years immediately
 “succeeding the operation of vaccination. It is
 “impossible to fix with precision the length of this
 “period of highest protection. Though not in all
 “cases the same, if a period is to be fixed, it might,
 “we think, fairly be said to cover in general a period
 “of nine or ten years.
- “(4) That after the lapse of the period of highest protective
 “potency, the efficacy of vaccination to protect against
 “attack rapidly diminishes, but that it is still con-
 “siderable in the next quinquennium, and possibly
 “never altogether ceases.
- “(5) That its power to modify the character of the disease is
 “also greatest in the period in which its power to
 “protect from attack is greatest, but that its power
 “thus to modify the disease does not diminish so
 “rapidly as its protective influence against attacks,
 “and its efficacy during the latter periods of life to
 “modify the disease is still very considerable.
- “(6) That re-vaccination restores the protection which lapse
 “of time has diminished, but the evidence shows that
 “this protection again diminishes, and that, to ensure
 “the highest degree of protection which vaccination
 “can give, the operation should be at intervals
 “repeated.
- “(7) That the beneficial effects of vaccination are most
 “experienced by those in whose case it has been most
 “thorough. We think it may fairly be concluded
 “that where vaccine matter is inserted in three or

“four places, it is more effectual than when introduced into one or two places only—and that if the vaccination marks are of an area of half a square inch, they indicate a better state of protection than if their area be at all considerably below this.”

There is another aspect of the case which is worth being taken into consideration.

In an unvaccinated community it is admittedly essential to isolate the first cases of small-pox in a most effectual manner, so as to prevent the rapid spread of the disease. But there are in the administrative county only eleven districts out of thirty that have hospitals, or means of isolation by arrangement, or are providing accommodation for isolating patients. And, in respect of such accommodation as there is, it is practically certain that it would prove wholly insufficient to control any wide-spread distribution of the disease throughout the county.

Where a person protects himself by vaccination and re-vaccination he can defy small-pox. When he neglects to do so, it is most important that the community should be provided with ample hospital accommodation for isolating him and the others whom he may infect. But if there be absence of vaccination, and deficiency of hospital accommodation, then the outlook can hardly be regarded with indifference.

It is to be hoped that the whole matter will, in the immediate future, receive judicious consideration in the several parts of the county where vaccination has of recent years fallen into disuse.

WATER SUPPLY.

A considerable number of the reports of the District Medical Officers of Health deal in some detail with the question of water supply as affecting their several districts.

The Medical Officer of Health for Brackley Borough writes:—“With regard to water supply, our position is about

“ the same as a year ago. The water in the well stands at about
 “ the same level (or a few inches lower). I understand that in
 “ the autumn there was at times a depth of not more than five
 “ or six feet of water. The pump has been lowered and can now
 “ keep at work as long as any water remains. I believe the
 “ necessity for curtailing the great waste of water which goes on
 “ is now recognised, and I understand you are now considering
 “ the various methods for preventing waste: as the matter seems
 “ to be urgent it is to be hoped that some definite plan may soon
 “ be arrived at. The use of water-meters (for extra domestic
 “ purposes) seems to be the most scientific and the fairest
 “ method.”

Following on his remarks in reference to the causation of certain cases of enteric-fever by the drinking of impure well-water, the Medical Officer of Health for the Borough of Daventry says, “I would also remind you that there are other wells of
 “ dangerous waters in the Town, which are not closed and to
 “ which also no notices are attached. I am aware that your
 “ attention is still occupied with the water supply, and sincerely
 “ trust that it will speedily be rewarded with success.”

The Medical Officer of Health for Higham Ferrers Borough writes:—“I believe the water of the Town continues of fairly
 “ good quality. Doubtless the abolition of the old cesspits, which
 “ is now complete, and the substitution of a regular system of
 “ scavenging, have done much to preserve from contamination
 “ the shallow wells on which the inhabitants have to depend.
 “ But a good supply of water is much needed both for domestic
 “ use and for flushing the sewers.”

From Desborough Urban District we learn that, following a Local Government Board Enquiry, “steps are now being taken
 “ by the Council to commence at an early date the construction
 “ of water works for the supply of the district;” and, from Far Cotton Urban District, that “there are about half a dozen wells
 “ still in use, but only one complaint of the water has been made
 “ during the year.”

The Medical Officer of Health for the Finedon Urban District writes:—"The water of three wells has been condemned. I must here again call the attention of the Council to the insufficient water supply of the town, especially to those districts where the water has been cut off by the cutting of the new sewer,—the south side of High Street in particular. It is hard to preach the gospel of cleanliness to a people with an insufficient water supply. I hope that before I present my next Annual Report the new water scheme, if not an accomplished fact, will be well under way."

From the Urban District of Kettering it is reported that "The Water Supply has been ample throughout the year, and excellent in quality, there has never been less than a year's supply in the Reservoir. An Act of Parliament will probably be shortly obtained for the transfer of the Water-works from the present Company to the Urban District Council."

The Medical Officer of Health for the Oundle Urban District reports as follows:—"The Council decided in the autumn that the town water supply should be submitted to an analyst every quarter. This has been done, and the analyst's report has proved satisfactory. Two samples of water have been submitted to me during the year. In both cases it was found unfit for use, and, upon being reported to the Council, an order was issued upon the owners, both of whom have had the town supply laid on."

From Rothwell Urban District the report comes that "The water supply is still obtained from shallow wells, with one or two exceptions, where they have had to be sunk to a considerable depth. From the geological character of our subsoil, shallow wells must always prove a source of danger. This, we hope, will in time be remedied, and an independent supply obtained from a source free from sewer-contamination, or pollution of any kind."

The Medical Officer of Health for the Wellingborough Urban District reports that "The Town water supply is good and plentiful, supplied by the Urban District Council. By a careful analysis made by a London Professor of Chemistry, it is certified to be very pure and wholesome. It is softened and filtered after being pumped from the wells." He further adds that "Several wells were closed during the year as the analysis of the water showed drainage contamination."

The following important "Special Report on Water Supply" is from the Medical Officer of Health for the Rushden Urban District, and is appended to his annual report:—"The present water supply is from surface wells (28 feet in sand) situated in the parish of Wymington. They were sunk by the Local Board in 1893. The quantity then was at the rate of 100,000 gallons in 10 hours pumping. This has since decreased, and at the present time it is only 50,000 gallons in 24 hours pumping. A fresh well was sunk near the above well in the Northants. sand last year, producing at the beginning 15,000 gallons of water in 24 hours pumping. This, however, is rapidly decreasing, and necessitates the council seeking other means of finding another source. Tenders have been accepted and the council are now about boring and probably will have to go through the Lias Clay about 250 feet, where is hoped an abundant supply will be found.

"That the boring scheme should be proceeded with at once is evident to all. This should be done to prevent serious results that are likely to follow from insufficient water. Most of the houses now use the town water, both for domestic purposes and as a direct supply to the water closets. In the latter case a diminished quantity would be a very serious matter as the sewers would not be properly flushed. We have now only about 8 gallons per head, whereas 16 gallons per head ought to be the minimum, and about 25 gallons is necessary as a general supply.

"The present wells are so circumstanced that they run no risk of contamination, Wymington being about half-a-mile

“distant. At the same time, it behoves the Council to prohibit Wymington parish from emptying any organic matter into their brook, as in that case it might prove dangerous to the wells.

“I examined 17 samples of well water, 8 of which were bad, and notices to that effect were placed upon the pumps.”

Taking now the aspect of water supply in the Rural Districts of the County, I find it stated, in respect of the Brackley Rural District, that “The water supply of the District, which consists of rural parishes, is derived mainly from shallow wells, and has been, with one or two isolated exceptions, efficient.”

In the Brixworth Rural District it appears that a case of Septic Tonsillitis in the village of Old led to analysis being made of the water of a well, which proved to be contaminated “by organic matter.” The well was accordingly closed. In connection, too, with a case of Enteric-fever at Cold Ashby, the water of a well was found to be polluted by sewage from a leaky drain.

The Medical Officer of Health for the Daventry Rural District reports as follows :—“Early in the year the able report of Dr. Bruce Low on the Water Supply of Long Buckby was published; acting on this report, your council appointed a Committee who invited competitive schemes for supplying the village with water, 17 competitors entered for the premium, and, after due consideration, it was awarded to Messrs. Mill, Brown, & Mill, of 145, Cannon Street, whose estimate for carrying out the work amounts to £3,470. This scheme is to obtain the water from the middle Lias Strata at the east end of the village by a deep well, and with storage reservoir supply the village by gravitation; further inquiries in the autumn were made regarding the geological aspect of the proposed site, and I hope before long that this important work will be begun.”

It is satisfactory to learn that “The water supply of the Easton portion of the Easton-on-the-Hill Rural District is very

“good, being conducted to the greater portion of the village by
 “Stand Pipes from a very pure source.” The Medical Officer
 of Health also recommends that “All Dip-Wells should be
 “abolished, as the danger of pollution by dirty buckets is very
 “great. The surface of the ground round the wells should be
 “protected from surface pollution by a layer of concrete, extending
 “over an area in proportion to the depth of the well, as deep
 “wells require protecting over a larger area.”

The Medical Officer of Health for the Gretton Rural District
 says that “The water supply of the villages is by means of
 “wells,” and further, that “One new pump has been erected
 “at Gretton.”

With regard to the Hardingstone Rural District, the Medical
 Officer of Health reports as follows :—“I am glad to report that
 “the water supply to the village of Hardingstone is now complete,
 “and the water was turned on for the use of the inhabitants on
 “November 22nd. The water is pumped up from a deep well
 “by a windmill into two reservoirs holding over 20,000 gallons, and
 “is then distributed to stands in the village for the use of
 “the cottagers, whilst many of the chief residents have it laid
 “into their houses. The works have been carried out by the
 “Trustees of the late Mr. Bouverie, who own most of the property
 “in the village, and who will recoup themselves by the levying
 “of a small water rate. There is no doubt that there is a
 “sufficient supply of water for the village, the interesting
 “question will be whether there will always be sufficient wind
 “to enable the windmill to pump up a regular and continuous
 “supply.”

The Medical Officer of Health for the Kettering Rural
 District reports thus :—“The scheme for procuring a better
 “Water Supply for Pytchley was not passed by the Inspector,
 “in whose hands the matter was placed, but further steps are
 “now being taken to improve the supply, and to bring it further
 “into the village. Most of the villages in the district have been

“fairly well supplied during the very dry summer and autumn
“we have experienced.”

Of the Middleton Cheney Rural District, it is reported that
“The water supply in this District is derived from wells with
“pumps or draw-wells, springs, and in one instance water is
“brought from a distance to supply the village. At Upper
“Boddington some of the Cottages are still without a proper
“supply but measures are being taken to remedy the evil.”

The Medical Officer of Health for the Northampton Rural District has the following:—“The provision for a pure water
“supply to the village of Kislingbury is slowly progressing. A
“Local Government Board enquiry has been held and, after the
“usual delays, the scheme has been sanctioned. Tenders have
“been invited, and I hope that the works will shortly be
“commenced.”

From the Oundle Rural District it is reported that “An
“improved water supply has been laid down to the village of
“Ashton, and that an extension of the water supply in Benefield
“has also been made.”

The Medical Officer of Health for the Oxendon Rural District reports thus:—“During the year there has been an
“exhaustive inquiry into the deficiency of the water supply, at
“Stoke Albany, and means have been taken for an improvement
“in the amount available. There has been no real dearth of
“water for the use of the inhabitants, and no detriment result-
“ing beyond inconvenience, as beyond a fair general supply, there
“is an abundance of private well sources. The water supply of
“the whole District is mainly by public and private well sources,
“and for the most part the supplies are ample and of good
“quality, and in a good state of care and repair,—but I would
“advise great care and supervision of all well sources by their
“owners, to prevent possible contamination by sewage, and
“infiltration of surface materials; also regular periodical attention
“to their cleanliness and efficiency. Four samples of water have

“been forwarded to me for special examination, of which three
“were good, and one contaminated with surface infiltration.”

The following is the report from the Potterspury Rural District:—“The necessity of pure water is so well understood
“that in this report it is unnecessary to do more than call
“attention to the circular of the Local Government Board of the
“17th December last, which pointed out the responsibility of the
“District Council in the matter, and to add that part of the
“villages of Potterspury and Paulerspury are still without a
“proper and sufficient supply—due, as pointed out in the report
“for 1895, to the opposition of small owners, to whom a large
“number, if not the majority, of the cottages belong.”

The Medical Officer of Health for the Towcester Rural District says, “I am glad to record that an improvement in the
“water supply of the villages of this district has been steadily
“going on during these past years. But in one matter wherein
“we might have done much to improve water supply we have
“practically stood still.” This reference to inaction is as to the
continuance of privy-cesspits, by which pollution of the sub-
soil occurs, and, while their abolition is urged, their substitution
by earth-closets is strongly and ably advocated.

With respect to the Wellingborough Rural District, the Medical Officer of Health reports as follows:—“Earls Barton
“has been suffering from a deficient supply and has been forced
“to depend upon shallow wells, many of which are polluted from
“being improperly constructed, although I have repeatedly
“pointed out how they ought to be built, and the District Council
“have had instructions printed and circulated, but at present
“without result.

“Great Doddington has now a good supply of pure water.

“Wilby has consulted Mr. Beeby Thompson, who has recom-
“mended my suggestion, viz.:—by fixing an hydraulic ram and
“laying pipes and stand-pumps throughout the village at a
“comparative small cost.

“Several wells have been closed as being polluted.”

DWELLING-HOUSES AND OVERCROWDING.

On the subject of the condition of the dwellings of the poorer classes, there are not many special remarks in the various reports under review; but the fact of "overcrowding" in relatively small amount is noted. It is desirable to know something as to the conditions under which the artisan classes dwell, whether generally their houses are or are not damp, dilapidated, dark or dirty, and whether there is marked improvement respecting them dating from any particular period. It is also important to know how far in the laying out of new streets of cottages, old and confined courts and yards are being abolished, and whether effective bye-laws are in force to secure sufficient air-space in front and rear of the dwelling.

The Medical Officer of Health for the Desborough Urban District reports as follows:—"Three cases of overcrowding came under observation, but these nuisances were at once abated on communicating with the offenders. I may here state that the supply of houses in the district is far below the demand. The scarcity of houses tends not only to injuriously interfere with the steady advancement of the town, but also makes it difficult to deal effectively with all cases of overcrowding."

From the Far Cotton Urban District it is reported that "No cases of overcrowding have been reported;" from Finedon Urban District, that "There has been also one case of overcrowding inquired into and put right;" from St. James' (N'ton) Urban District, that "There have been two cases of overcrowding;" and from Kettering Urban District, that "Seven houses have been closed by order of the Council as unfit for habitation."

The Medical Officer of Health for the Oundle Urban District reports thus:—"In August the Council directed me with the Sanitary Inspector to make a special report on the condition of Havelock Cottages. We found two of the houses in a very

“dirty state, and overcrowded, whereupon the Council issued an order for the same to be closed and thoroughly cleansed.”

From Rothwell Urban District the report comes:—“The general condition of the dwelling-houses is fairly good. On our visits of inspection, we have found no decided case of overcrowding, though, in one or two cases, there is still something to be desired in the matter of cleanliness. In the new houses being built, more attention is now paid to the size of the living rooms, and the bedrooms, especially, are constructed on better sanitary principles.”

On the other hand, the Medical Officer of Health for the Wellingborough Urban District reports thus:—“The overcrowding I find amongst the poorer classes of the inhabitants requires remedying, and many of the oldest houses are becoming unfit for human habitation in a sanitary point of view.”

The Medical Officer of Health for the Brixworth Rural District states that “certain houses were closed owing to overcrowding, and their not being fit for human habitation;” and these appear to have been in the village of Spratton.

In consequence of a careful house-to-house survey in the Crick Rural District, the Medical Officer of Health is enabled to report as follows:—“I condemned three cottages in Crick as unfit for human habitation, one of which was put into decent repair and the other two were closed. I also condemned five in Kilsby, all of which have since been put into decent repair. At Yelvertoft there are still about twenty vacant cottages some of which are in good habitable repair, but in all the villages there is a considerable number of cottages which renders it a difficult matter to keep them wind and weather proof and the Sanitary offices in decent repair, so that not only is constant supervision necessary, but frequent notices to repair or close.”

In the Daventry Rural District, it appears that only “one case of overcrowding came under notice, and this was abated.”

The Medical Officer of Health for the Easton-on-the-Hill Rural District very properly suggests "that attention should be paid to spouting eaves of all dwelling-houses, to preserve the foundation of the walls from damp."

The Medical Officer of Health for the Hardingstone Rural District reports that "only one case of over-crowding" was brought to his notice during the year. He further says "only nine new cottages have been built in the district during the year. Dilapidated ones have been condemned at Brafield and at Rothersthorpe, and in each case will be re-built or put in proper repair."

In the Abington portion of the Northampton Rural District, it appears that "building operations are being actively carried on." The Medical Officer of Health also reports that "some cases of overcrowding" were dealt with, and in respect of dwellings unfit for habitation makes the following remarks:—"Some dilapidated cottages at Great Billing have been condemned and will be demolished. This is one of the drawbacks of putting this Act in force. Cottages are already scarce in this village, and it is a hardship to the cottagers to turn them out of these dilapidated buildings when they are unable to find others and are probably driven into the town. In this case however the cottages were positively dangerous, and were obliged to be condemned."

From the Oundle Rural District it appears that "in February a case of overcrowding was reported at Hemington," and that "the condition of certain houses known as "Elderkin Square," in Warmington came in for attention.

The Medical Officer of Health for the Oxendon Rural District reports that "Three cases of insanitary Dwellings, and also one case of overcrowding were reported and investigated, and the necessary steps taken to abate the nuisance."

In the Potterspury Rural District it seems that, of overcrowding, "a few cases came under notice, and were dealt with

“ as far as practicable,” and it is satisfactory to be told also that “ The National Schools of the district are in good sanitary condition, well-ventilated, and clean.”

The Medical Officer of Health for the Thrapston Rural District says of Raunds that “ numerous and extensive improvements have been effected by private owners of property ; as examples of this, I would specially point to Saunders Gardens and Finedon Terrace as properties which have been completely transformed.” In reference to the village of Titchmarsh, owing to the occurrence of several cases of diphtheria, “ A thorough house-to-house inspection of the whole village was made.” As a result of this, it appears that “ a considerable number of sinks were found to be in direct communication with the drains ” but otherwise the village was found to be “ in a fairly good sanitary state.” Further than this, “ Cases of over-crowding were also reported at Caldecot, Chelveston, Brigstock, and Stanwick, and a house at Ringstead was inspected and reported as unfit for occupation.”

The Medical Officer of Health for the Wellingborough Rural District states that “ Several cases of overcrowding have been dealt with without taking extreme measures.”

EXCREMENT AND REFUSE DISPOSAL.

The existence “ of a regular system of scavenging ” is referred to in the report on the Borough of Higham Ferrers, and is stated to have “ been well carried out during the year.” It is further noted by the Medical Officer of Health for the Borough, in reference to a case of diphtheria, as already recorded, that this “ occurred in a house with a W.C. directly connected with the sewer, and which has to depend upon flushing by hand, an arrangement that obtains in many instances in the town, but is altogether unsatisfactory and dangerous to health.”

At Desborough the modes of excrement disposal appear to be “ Pails, middens, and hand-flushed W.C.'s,” and as to Scavenging, “ the contents of pails and privies, and household

“refuse are removed periodically (twice a week) by cart, and
“disposed of to a farmer in the neighbourhood.”

The Medical Officer of Health for the Finedon Urban District writes:—“We have still too many cesspits in the town, and it
“shall be my endeavour to lessen the number year by year until
“none are left.” Forty-nine pails have been condemned and
“replaced by new ones; and further, in reference to scavenging,
“There have been no complaints made to me as to the way in
“which the night-soil men have done their work.”

The scavenging in the St. James' (N'ton) Urban District is reported to be “satisfactory.” At the same time, “The dwell-
“lings of the poorer classes are, as a rule, in good condition; but
“scarcely any of the closets are supplied with a flushing
“apparatus, except those of the largest houses, with the result
“that 43 closets have been blocked during the year—a condition
“of things unfavourable to health. Every closet should have a
“water cistern to properly flush it, and carry its contents
“onwards.”

The Medical Officer of Health for the Kettering Urban District reports as follows:—“There are still many Water
“Closets in the district without cisterns, depending entirely
“for their cleanliness upon hand flushing. This principle is
“necessarily a bad one, but a very difficult one for which to
“provide a remedy, as many of them are in such a position that
“it would be almost impossible to prevent the freezing of the
“cisterns and supply pipes in severe weather.”

Referring to the need for additional water to keep the sewers free from deposit, the Medical Officer of Health for the Kingsthorpe Urban District reports as follows:—“I have before
“suggested that those houses having water-closets should be
“compelled to provide a separate water cistern of a capacity of
“not less than two gallons for every such closet. This would
“afford not only a more complete flushing of the house drains,
“but also of the main culverts. I have made many enquiries as

“to the amount of water put down the closets, and in very few
 “instances found that more than a bucket or two was used per
 “house per day. One man who told me that he flushed his
 “closet remarkably well, admitted that he put down two buckets,
 “and perhaps three, as much as two or three times a week.
 “With most authorities the amount of water required for each
 “person allows five gallons per day for use in the water-closets.
 “The average number of persons in each house being five, gives
 “us an allowance of 25 gallons per day for flushing the water-
 “closets in each house. I think we should be well over the
 “mark if we said that five gallons per house per day is now
 “used for this purpose. Not only must we have well-made
 “sewers also well laid with a good fall, but as well a good
 “supply of water, if we wish to prevent deposits taking place on
 “the floor and sides of the culverts, which cause unpleasant, and,
 “in some cases, dangerous gases to escape into the streets.”

The Medical Officer of Health for the Rothwell Urban
 District writes thus:—“The ‘Privy-midden’ is still more or less
 “in evidence, and must be a source of nuisance, not only of water-
 “pollution, but of general discomfort and ill health. We have,
 “here and there, still Earth Closets without earth, and Water
 “Closets without water.” Referring to sanitary requirements at
 the Schools, he adds, “The closet accommodation was decidedly
 “objectionable, for it was here we found the anomaly of earth
 “closets without earth.”

The Medical Officer of Health for the Wellingborough Urban
 District states that “The scavenging is thoroughly carried out.”

The Medical Officer of Health for the Easton-on-the-Hill
 Rural District writes:—“I must repeat my advice that existing
 “Privy Vaults be done away with, and dry earth closets with
 “pails be substituted.”

Speaking of Refuse Disposal, the Medical Officer of Health
 for the Gretton Rural District says:—“This is done by the
 “occupiers. In order to prevent the accumulation of filth in the
 “larger villages, it would be better that a scavenger be employed.”

The Medical Officer of Health for the Towcester Rural District makes a justly vigorous protest against the common method of excrement disposal. He says that "privies with cess-pits abound, fouling the subsoil and polluting the air." "Surely," he adds, "the storing up and accumulating quantities of decomposing excreta under or about places of convenience, with their surrounding air filled with the disgusting products of putrefaction and with the soil around often charged with them, must seem shocking to all who seriously consider this subject." But he is not content with mere condemnation of the system, for he adds his suggestion for remedy:—"The most effectual procedure would be that each Town and Village Community should Scavenge itself collectively, and that earth closets should be substituted for privies, bye-laws being made by the Authority." He adds that this had practically been accomplished in the village of Whittlebury, "mainly through the enlightened action of a member of the Council."

"Cesspits have been filled in and the pail system adopted" at Sywell in the Wellingborough Rural District, and the Medical Officer of Health writes thus:—"Many cesspits have been done away with in other parts of the district and pails substituted. I would again recommend the use of peat instead of earth for the pails." He also says, "The drainage at Earls Barton has been very defective but has latterly been much improved; many of the new houses have been built for water closets, but without water being laid on, so that the drains became blocked; they have been cleaned out, but the same thing will frequently occur unless water is laid on so that they can be properly flushed."

HAND-FLUSHED CLOSETS:—It is not ~~im~~possible to read these remarks of the different District Medical Officers of Health without being impressed by the uniformity of their opinions in condemnation of the system, which prevails so extensively in the County, of so-called "water-closets," which depend on chance or the inclination of their users for their flushing and cleansing. Such "water-closets" are hardly inferior in their insanitary

contrivance to the privy vaults which experience has universally condemned.

Works of drainage, which the public health requires for the convenience and comfort and well-being of a community, cannot be kept free from nuisance and danger to health unless they be effectively served with water. Any arrangement by which this principle of cleanliness of drains or sewers is evaded must result in filthiness and nauseating odours. To make the application of water for the flushing and cleansing of closets and drains uncertain and discretionary on the part of their users is to put a premium on the creation of filth-nuisance.

It is indefensible to erect "water-closets" without proper means for their regular flushing in districts where there is an abundant public water-supply, and, in districts where a public water-supply is not available for laying on water to every house, some other system than the occasional application of buckets of water for flushing purposes ought to be devised.

I suggest that more careful consideration of the whole subject is necessary in the interest of the public health by many of the districts of the County.

If earth-closets are preferred, then systematic arrangements are required for regular scavenging. If water-closets are desired, then they ought to be furnished with separate flushing cisterns, or they might possibly be of the nature of any of the well-known forms of "automatic slop-water closets." But the abolition of "water-closets without water" is as much a sanitary necessity as the abolition of the "privy-midden," and it is greatly to be hoped that this matter will receive careful consideration and attention in the districts where they at present exist.

SEWERAGE AND SEWAGE DISPOSAL.

From the Borough of Brackley it is reported that "A new drain has been laid down in the Manor Road to serve the cottages which are being erected there."

The Medical Officer of Health for the Borough of Daventry reports to his Council as follows :—“ During the year, together
 “ with the Inspector of Nuisances I completed the house-to-house
 “ visitation begun in 1896 (with the exception of a few houses
 “ on the outskirts of the town which the new sewer does not
 “ reach and a few new houses whose drainage is already well
 “ known to you), and I have reported to the Sanitary Authority
 “ every matter requiring attention, which Authority has promptly
 “ given orders for the remedying of all defects. These remarks
 “ do not apply to Drayton which remains as previously reported
 “ to you.”

Of Sewerage in the Urban District of Desborough it is stated that the “ whole of the district is properly sewered by
 “ glazed earthenware socketted pipes, ventilated by 16 shafts,”
 and that the “ Sewers are flushed by water-cart weekly.” The treatment of the Sewage appears to be by precipitation and intermittent irrigation, and the sewage farm to extend over six acres of land.

The Medical Officer of Health for the Finedon Urban District writes, “ In referring to the Sanitary condition of
 “ Finedon in my last annual report, I congratulated you on the
 “ commencement of the new sewage scheme. This year I con-
 “ gratulate you on its near completion. Not, however, until all
 “ the communications are made shall we reap the full benefit of
 “ this great work.”

The sewage disposal of the St. James' (N'ton.) Urban District is stated to be “ satisfactory.”

The Medical Officer of Health for the Kettering Urban District reports as follows :—“ A vast amount of work has been
 “ done during the past year in the matter of sewers and sewage.
 “ New sewers have been constructed in Headlands Road, Bowling
 “ Green Road, London Road, Lower Street, Northall, Rockingham
 “ Road, Montagu Street, Bath Road, Silver Street, and Dalkeith
 “ Place, the old sewers being now used for surface water only. New

“ surface water drains have been made in Northampton Road, Mid-
 “ land Road, Queensbury Road, Hawthorn Road, Montagu Street,
 “ and adjoining streets, Duke Street, Buccleuch Street, and the
 “ streets branching from them. The new work in the sewers
 “ includes the disconnecting of both new and existing sewers
 “ from the main outfall sewers, and a number of additional
 “ ventilating pipes are being erected. These arrangements will
 “ prevent gases from ascending into the town, and the foul
 “ emanations from the manholes, which have been the cause of
 “ so many complaints will no longer exist. The old precipitation
 “ tanks are being much enlarged, and the method of passing
 “ sewage through them altered, so that it will be almost
 “ impossible for any solid matter to come over with the effluent.
 “ Both precipitation and effluent will be greatly improved. One
 “ filter is almost completed, and another is in a forward
 “ state; arrangements will be made to work them as soon as
 “ possible. Progress is also being made with the 30 acres which
 “ has been purchased for the further purification of the sewage.”

“ The filters are constructed chiefly of coke breeze, the area
 “ of each filter bed being 1,800 square yards, containing coke breeze
 “ four feet thick. Although the outlay for these works must
 “ necessarily be great, the result will be worthy of the rapidly
 “ increasing town which Kettering has become, and it is greatly
 “ to be hoped that the very low general and Zymotic death-rates
 “ will continue, and even improve; while the effluent from the
 “ Sewage Works before it passes into the brook will be absolutely
 “ pure.”

The Medical Officer of Health for the Kingsthorpe Urban District writes thus :—“ Many improvements have been carried
 “ out in the District during the past year. With the exception
 “ of one property all the houses in Kingsthorpe are now connected
 “ by drains with the main culverts. The condition of Arthur
 “ Street, Semilong, has been greatly improved, a main culvert
 “ having been carried right through the street and all the houses
 “ connected separately with it by drains, which have been venti-
 “ lated by pipes carried up above the eaves. Flushing of the

“ main culverts through the manholes has been carried out At
 “ the same time I do not consider this sufficient to keep the
 “ culverts free from deposit, which is the cause of the unpleasant
 “ smells that escape from the ventilators at the top of the
 “ manholes.”

In the Oundle Urban District “several houses have been
 “ connected with the drainage system during the year, and there
 “ now remain very few, where practicable, unconnected.”

In the Rothwell Urban District the “ main sewer is in good
 “ working order, and house drainage is in most instances complete.”
 It is, however, stated specially that “ Some of the property up
 “ Wales Street still wants draining. This should be attended to
 “ as it may form a source of infection and disease, and endanger
 “ the health of the town at large.”

It is reported from the Rushden Urban District that in the
 month of June “ the manholes of the main sewers were very
 “ offensive,” and, the Medical Officer of Health adds, “ I advised
 “ their being systematically flushed, and at the present time we
 “ have a flushing van in use.”

The Medical Officer of Health for the Wellingborough
 “ Urban District declares that “ The drains and sewers have
 “ been regularly disinfected, and all sanitary defects remedied.”

In the Rural District of Brackley, it is stated that “ New
 sewers to replace old stone and agricultural drains have been
 “ put in at Crowfield, Eydon, and Helmdon, but much remains
 “ to be done in this direction at Helmdon and Syresham. The
 “ sewage tanks at Kings Sutton and Thorpe Mandeville have
 “ been attended to.”

In the Brixworth Rural District, as elsewhere mentioned, the
 occurrence of Infectious Throat-illness at Spratton led to the
 discovery of badly ventilated and inefficiently flushed drains, and
 measures were instituted to rectify these defects.

“Several drains were repaired and ventilating shafts inserted” at Weedon, in the Daventry Rural District; and, in respect of other places, “In Woodford the main drain by the schools was taken up for a distance of about 190 yards, and replaced with socketted pipes; in Newnham, 75 yards; in Badby, 60 yards; and in Byfield, 56 yards, were taken up and treated in the same way.” Further, “In August complaints were made regarding the drainage of West Haddon. A Committee was appointed to meet the Parish Council, and enquire into the matter; this meeting took place on August 31st, and the drainage of the whole village was inspected. This was found to be in a satisfactory state; but, as some of the drains were trapped and others not, it was recommended that the village be trapped throughout, and that a sufficient number of ventilating shafts be inserted. This work is shortly to be carried out.”

Referring to Drainage, the Medical Officer of Health for the Gretton Rural District says that it is “In all cases into ditches and brooks.” He mentions further that “About 120 yards of old sewers have been relaid with socketted pipes.”

In the Hardingstone Rural District, it appears that “An irrigation farm has been laid out for the village of Little Houghton, and is now in working order. The irrigation farms at Denton and Milton have worked satisfactorily during the year. That at Hardingstone has not been so good, and the effluent has at times been complained of. Unless these farms are in proper hands and well looked after, they become very dangerous, and some change in the working of this farm will probably have to be made, as, since the new water supply to this village has been opened, no less than 50 to 60 closets have been connected with the sewers. The drainage system at Yardley Hastings is proceeding piece-meal, and that at Roade has not yet been commenced. Several Local Government Board enquiries have been held, but no scheme that is satisfactory has yet been passed. Meanwhile several years have elapsed and the question is most pressing.”

It appears that “Plans are being prepared for the Broughton “Sewage Scheme,” and that “The Corby Brook has been well “cleaned out” in the Kettering Rural District.

The Medical Officer of Health for the Middleton Cheney Rural District says, “I have during the year inspected each “Village, and much attention is now being paid to the proper “trapping and general improvement to the drains in connection “with the cottages.”

It appears from the report of the Medical Officer of Health for the Potterspury Rural District that pollution of water is caused by the sewage outfall at Old Stratford, and that it “will “require special treatment in the way of a settling tank, &c.”

“A complete drainage system is being carried out” at Raunds, which till recently formed a part of the Thrapston Rural District. “The question as to the disposal of the sewage of “Thrapston has not yet been settled, but is under consideration.” “An improved system of drainage has been laid down” for the village of Great Addington.

The Medical Officer of Health for the Wellingborough Rural District reports that “New Barton drainage has been attended “to and is now in a satisfactory condition ; that at London-end, “Earls Barton, is also being attended to. Sywell has been re- “drained throughout.” He also reports as follows:—“Earls “Barton and Wollaston have Sewage Farms.” “The drainage “at Little Irchester has been a source of nuisance ; I believe the “Parish Council are considering a scheme ; the sooner it is “carried out the better it will be for the inhabitants. Irthling- “borough is at a standstill in the matter of drainage, the Local “Government Board not having sanctioned the site for a Sewage “Farm. The other Villages in the District are satisfactory.”

LODGING-HOUSES.

In only a very few of the reports is any mention made of the inspection of common lodging-houses.

They appear to have been "regularly inspected, and the "occupiers required to keep them in proper sanitary condition" in the Borough of Daventry, and the Medical Officer of Health for the Kettering Urban District says, "There is only one "licensed Lodging-House in Kettering, and this, although often "very full, has always, on the numerous inspections made, been "found clean and in good condition, and free from all infectious "disease."

SLAUGHTER-HOUSES.

Several of the reports refer to the inspection of slaughter-houses, and these appear to have been generally kept in a fair condition. They are stated to have been kept in "proper sanitary "condition" in the Borough of Daventry, and to "have been "from time to time inspected and found in a satisfactory "condition" in the Desborough Urban District. The Medical Officer of Health for the latter place also reports that "An "application was received for the licence of a slaughter-house in "New Street, but this was refused by the Council on the ground "that it was not in accordance with the requirements of the "Bye-laws."

In the Far Cotton Urban District, it appears that "there are "three slaughter-houses, which have been kept in good order," and those in the St. James' (N'ton) Urban District "have all "been visited and found in a satisfactory state."

The Medical Officer of Health for the Kettering Urban District reports that "The Slaughter-Houses have, in most "instances, been well kept, but several of them are in most un- "suitable places, and one at least has been used for a far greater "number of animals than could be properly accommodated in so "small a space." He adds further, "Perhaps the public work "most required in this district, is the erection of Public Slaughter "Houses. The time is not far distant when the inspection of "Meat will be considered of far greater importance than has "been attached to it in the past, while the treatment of animals "before slaughter, and the places in which the carcasses are

“dressed, ought certainly to be carried out under the strictest rules of cleanliness. These arrangements can only be executed to the best advantage by the use of a public abattoir, and the demolition of the smaller and unsuitably-situated slaughter places.”

The Medical Officer of Health for the Oundle Urban District also reports that “During the year the Council have considered the question of providing a public slaughter-house for the town, but as yet have come to no decision in the matter,” and the Medical Officer of Health for the Wellingborough Urban District says, “In my opinion there are more Slaughter-houses in all parts of the Town than there ought to be, as the drains and sewers become contaminated and unhealthy, and I still consider, as I have reported before, that a Public Slaughter-house is much required for the Town.”

Inspections of slaughter-houses are also recorded for the Easton-on-the-Hill, the Kettering, and Wellingborough Rural Districts. In the last named, two “were found in an unclean state, but were immediately attended to.”

BAKEHOUSES.

A few of the reports make mention of the regular inspection of bake-houses; but in the case of three only are there observations which call for special notice.

The Medical Officer of Health for the Kingsthorpe Urban District reports as follows:—“I have visited the bake-houses in the District. In one instance, at our suggestion, a new floor was laid in the bake-house and the adjoining yard re-paved; in another the bake-house was enlarged and the stables which indirectly communicated with the bake-house have been removed to a much further distance. The remainder were found in a satisfactory condition.”

In respect of the Potterspury Rural District, it is stated that “Generally it is the practice to limewash bake-houses twice a

“year, but in a few cases it has been done once only—an omission “promised to be rectified in future;” while, in regard to the Wellingborough Rural District, it is reported that “Bake-houses have been regularly inspected, and found on each visit “well kept and clean with the exception of two. These were “put in thorough repair at once.”

DAIRIES, COWSHEDS, AND MILK SHOPS.

A few only of the reports give evidence of attention being paid to the requirements of the Dairies, Cowsheds, and Milk Shops Order. This is to be regretted, as the subject of milk-production and the care of the animals is one intimately concerned with the public health, and is yearly creating greater interest in the consumer.

The Medical Officer of Health for the Kettering Urban District reports that the Dairies in that District “have been on “the whole very well kept,” and that “no case of infectious “disease has been traced to milk supplies;” and the Medical Officer of Health for the Oundle Urban District says that his Council “have also had under their consideration the Milkshops “and Dairies Act, and are only awaiting the framing of bye-laws “before adopting the same.”

In respect of the Wellingborough Rural District, it is reported that “Several inspections have been made, and in four “cases requests were made to have the places cleansed and lime- “washed, which were attended to.”

FOOD INSPECTION.

The Medical Officer of Health for the Desborough Urban District states that “an eye has been kept upon meat, poultry, “game, fish, and other articles of food to which the provisions of “the Public Health Act in this behalf apply. In no case has it “been found necessary to take legal proceedings;” and the Medical Officer of Health for the Finedon Urban District says “I have “not found it necessary to condemn any articles of food exposed “for sale.”

The report for the Kettering Urban District states that “Meat, Fish, and Fruit has been frequently inspected, especially “in the market ; and a warning now and then has been, in most “instances, enough to prevent anything unwholesome from being “offered for sale.”

The Medical Officer of Health for the Wellingborough Urban District also states that “there has not been any seizure of “impure food during the year,” and similar references are made by the Medical Officers of Health for the Brackley and Potterspury Rural Districts.

References to this subject are, however, not made in the majority of the reports.

CEMETERIES AND CHURCHYARDS.

The Medical Officer of Health for the Desborough Urban District reports as follows :—“The sanction of the Local Government Board has been obtained for the loan of a sum sufficient “to defray the expenses incidental to the acquisition and laying “out of land for the purposes of a general cemetery. Having “regard to the present congested state of the Church burying “ground, it is very evident that, in the interests of the public “health, this scheme should be put into effect without any un- “necessary delay.”

From the Rothwell Urban District, the report comes that “Some years ago the Churchyard was enlarged, and though the “burial space up to now has been adequate, the town is increasing, “so that very soon the propriety of providing a Cemetery will “have to be considered.”

Speaking of “Churchyards,” the Medical Officer of Health for the Potterspury Rural District says “No special remarks are “required on this head.”

FACTORIES AND WORKSHOPS.

There are but few references to the inspection of factories and workshops.

It is, however, satisfactory to note that in the Kettering Urban District "The Factories have been visited and inspected "from time to time," and that "A great improvement has taken "place during the last few years in their construction and "healthiness." It is also stated that workshops have been visited frequently during the year in the Desborough and Rushden Urban Districts, as well as in the Kettering and Potterspury Rural Districts.

It is to be hoped that the important sanitary provisions of the Factory and Workshops Acts do receive regular attention, particularly in the growing manufacturing districts.

BYE-LAWS.

The Medical Officer of Health for the Borough of Brackley calls the attention of his Council to the fact that they have "no "bye-law to fix the distance from a dwelling at which pigs may "be kept," and according to his report, there is evidently a grave necessity for this administrative defect to be remedied in that Borough.

It appears that "Model Bye-laws will shortly come into "force at Broughton and Burton Latimer" in the Kettering Rural District.

CHARLES E. PAGET,

County Medical Officer of Health.

Northampton,

May 11th, 1898.

TABLE OF DEATHS,

During the year 1897, in the URBAN SANITARY DISTRICTS of the Administrative County of Northampton,
classified according to DISEASES, AGES, and LOCALITIES.

URBAN SANITARY DISTRICTS.	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.							Aged under 5 or over 5.	MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																						
	At all Ages.	Under 1 year.	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and up-wards		Small-pox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.					Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	TOTAL.	
BRACKLEY (BOROUGH) ...	68	17	5	4	2	19	21	Under 5 5 upwds.												5		1		4	4	6	1	12	22		
DAVENTRY (BOROUGH) ...	73	14	2	4	2	20	31	Under 5 5 upwds.						1						1		2	1	1	1	2	1	9	16		
HIGHAM FERRERS (BOROUGH)	31	5	3		3	10	10	Under 5 5 upwds.		2														3	4	4	1	2	8		
DESBOROUGH	49	16	8	1	1	13	10	Under 5 5 upwds.					2							1	1		1	2	3	4		19	24		
FAR COTTON	44	15	6			13	10	Under 5 5 upwds.		1										2	1		2	2	5			12	21		
FINEDON	59	25	6	3	2	14	9	Under 5 5 upwds.		1				1						2	2			11	2	3	1	15	31		
ST. JAMES', NORTHAMPTON	109	45	22	3	5	20	14	Under 5 5 upwds.		2		3								4	18			1	20	5		14	67		
KETTERING	359	114	39	13	19	78	96	Under 5 5 upwds.		1		1								4	10		3	2	33	2	2	100	153		
KINGSTHORPE	176	72	38	15	4	22	25	Under 5 5 upwds.		16								2			12	12			1	21	1	1	46	110	
OUNCLE	35	5	1	1		8	20	Under 5 5 upwds.				1												14	10	5		28	66		
*RAUNDS								Under 5 5 upwds.																	1	4	3	1	19	29	
ROTHWELL... ..	68	26	9		4	15	14	Under 5 5 upwds.				1								2	8			2	8	5		16	35		
RUSHDEN	164	59	26	9	8	29	33	Under 5 5 upwds.		2	1			5						10	6				20	11	2	46	85		
WELLINGBOROUGH	243	64	30	8	11	63	67	Under 5 5 upwds.		4				3						19	8			17	9	11	1	32	79		
TOTALS	1,478	477	195	61	61	324	360	Under 5 5 upwds.		27	1	6		2				3		2		62	66	7	2	5	141	8	7	345	672
										18	2			10						3	4		19	111	91	103	17	416	306		

* Included in Thrapston Rural District for statistical purposes for the year 1897: became Urban District towards end of the year.

"Districts" printed in heavy type are those in which there is no Official Notification of Disease.

TABLE OF DEATHS,

During the year 1897, in the RURAL SANITARY DISTRICTS of the Administrative County of Northampton,
classified according to DISEASES, AGES, and LOCALITIES.

RURAL SANITARY DISTRICTS.	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.							Aged under 5 or over 5.	MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																					
	At all Ages.	Under 1 year.	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards		Small-pox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.					Typhus.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	TOTAL.
BRACKLEY	120	29	6	3	3	25	54	Under 5 5 upwds.												3	2			1	8		1	20	35	
BRIXWORTH	186	29	14	8	6	45	84	Under 5 5 upwds.	1	1	1							1		11	1		3	10	7	19	1	48	83	
CRICK	49	8	4	1	1	10	25	Under 5 5 upwds.		4				1										1	6	2		18	43	
DAVENTRY	176	31	9	5	10	49	72	Under 5 5 upwds.	1												1			2	6	2	1	25	37	
EASTON ON THE HILL ...	14	1	1			2	10	Under 5 5 upwds.	1								1			1	3			12	12	18	10	24	40	
GRETTON	31	5	1	1	2	9	13	Under 5 5 upwds.													1		1	1	2			7	12	
HARDINGSTONE	152	35	12	6	5	17	77	Under 5 5 upwds.	1												2		1	3	1	5	2	4	6	
KETTERING	156	37	13	3	2	27	74	Under 5 5 upwds.			1							1			3			3	17			12	25	
MIDDLETON CHENEY...	42	11	3		2	9	17	Under 5 5 upwds.										1				2		9	14	13	9	53	105	
NORTHAMPTON	184	20	10	9	10	62	73	Under 5 5 upwds.													7	2		3	9			32	50	
OUNDLE	128	18	8	7	5	22	68	Under 5 5 upwds.										1					3	5	18	19	5	55	106	
OXENDON	57	9		3	2	15	28	Under 5 5 upwds.													1	1			8	13	16	1	60	102
POTTERS PURY	86	16	8	1	3	20	38	Under 5 5 upwds.													5	2			3	3	4		38	48
*THRAPSTON	232	50	25	11	7	56	83	Under 5 5 upwds.	2	1	1							1		21	10			5	11	21		12	24	
TOWCESTER	176	36	17	4	5	42	72	Under 5 5 upwds.	1	1	1									2	7	1			23			16	75	
WELLINGBOROUGH	292	94	27	12	27	62	70	Under 5 5 upwds.						1							1			10	17	22	4	90	157	
																									15			26	53	
																					10	3		10	12	15	3	81	123	
																									37			68	121	
																									28	20	5	89	171	
TOTALS	2081	429	158	74	90	472	858	Under 5 5 upwds.	8	5	3			11				1	3	73	30	5	1	10	158	2	3	290	587	
									4	12	1									3	10		8	125	170	213	56	872	1494	

* Inclusive of Raunds Urban District.

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TABLE OF POPULATIONS, BIRTHS, AND NEW CASES OF INFECTIOUS SICKNESS,

Coming to the knowledge of the Medical Officers of Health, during the year 1897, in the URBAN SANITARY DISTRICTS of the Administrative County of Northampton, classified according to DISEASES, AGES, and LOCALITIES.

URBAN SANITARY DISTRICTS.	POPULATION AT ALL AGES.		Registered Births.	Aged under 5 or over 5.	NEW CASES OF SICKNESS IN EACH LOCALITY, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICERS OF HEALTH.											NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.												
	Census, 1891.	Esti- mated to middle of 1897.			Small-pox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.					Cholera.	Erysipelas.	Measles.	Small-pox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.					Cholera.	Erysipelas.	Measles.
									Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.								Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.			
BRACKLEY (BOROUGH) ...	2,591	2,763	81	Under 5 5 upwds.	}	Some				3																		
DAVENTRY (BOROUGH) ...	3,939	3,939	112	Under 5 5 upwds.		3				6				8														
HIGHAM FERRERS (BOROUGH)	1,810	2,000	67	Under 5 5 upwds.		40 35	1						3															
DESBOROUGH	2,872	3,534	130	Under 5 5 upwds.		3			2 8				2															
FAR COTTON	2,182	3,895	107	Under 5 5 upwds.	}	16	1						7															
FINEDON	3,197	3,690	153	Under 5 5 upwds.		14 19				3				1														
ST. JAMES', NORTHAMPTON	4,159	5,840	234	Under 5 5 upwds.		20 39	2	1				1	3	2		1												
KETTERING	19,454	26,500	933	Under 5 5 upwds.		16 43	1	1		11			2 30			9 43				4								
KINGSTHORPE	7,697	11,825	460	Under 5 5 upwds.	}	210	2			1			18															
OUNDLE	2,680	2,667	38	Under 5 5 upwds.			2 1	1																				
RAUNDS		*3,055	†	Under 5 5 upwds.		6 13		1		5 11			3															
ROTHWELL... ..	3,378	4,275	143	Under 5 5 upwds.		6 5		1				1	5															
RUSHDEN	7,443	10,950	393	Under 5 5 upwds.	}	100	5			28																		
WELLINGBOROUGH	15,068	18,000	491	Under 5 5 upwds.		77	8			21			3	16			1 2	1			2						1	
TOTALS	76,470	99,878	3,345	Under 5 5 upwds.	}	665?	23	5		99			5		98	2		56	1			6				1		

* Population included in Thrapston Rural District for statistical purposes for the year 1897.

† Births included in Thrapston Rural District.

"Districts" printed in heavy type are those in which there is no Official Notification of Disease.

TABLE OF POPULATIONS, BIRTHS, AND NEW CASES OF INFECTIOUS SICKNESS,

Coming to the knowledge of the Medical Officers of Health, during the year 1897, in the RURAL SANITARY DISTRICTS of the Administrative County of Northampton, classified according to DISEASES, AGES, and LOCALITIES.

RURAL SANITARY DISTRICTS.	POPULATION AT ALL AGES.		Registered Births.	Aged under 5 or over 5.	NEW CASES OF SICKNESS IN EACH LOCALITY COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICERS OF HEALTH.										NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.													
	Census 1891.	Estimated to middle of 1897.			Small-pox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.					Cholera.	Erysipelas.	Measles.	Small-pox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.					Cholera.	Erysipelas.	Measles.
									Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.								Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.			
BRACKLEY *	7,779	7,780	189	Under 5 5 upwds.		8 16	3								5													
BRIXWORTH †	12,186	12,200	298	Under 5 5 upwds.																								
CRICK	2,427	2,427	69	Under 5 5 upwds.		1									1													
DAVENTRY	13,709	13,710	406	Under 5 5 upwds.	}	61	1			5			1		18													
EASTON ON THE HILL ...	1,635	1,635	51	Under 5 5 upwds.							1												1					
GRETTON	1,701	1,680	38	Under 5 5 upwds.											1													
HARDINGSTONE	8,421	8,420	196	Under 5 5 upwds.	}	60	2			1					9		43											
KETTERING	10,561	11,230	295	Under 5 5 upwds.		2	2			2					19													
MIDDLETON CHENEY ...	2,606	2,620	61	Under 5 5 upwds.		1 7																						
NORTHAMPTON	6,449	6,610	158	Under 5 5 upwds.	}	43	40			2					3													
OUNDLE	7,906	7,800	182	Under 5 5 upwds.		19 39	2			2			1		4													
OXENDON	4,734	4,608	100	Under 5 5 upwds.		15																						
POTTERSPURY	5,930	5,880	140	Under 5 5 upwds.		3 18							1		1 4													
THRAPSTON	13,512	14,500‡	417	Under 5 5 upwds.		10 19	2 5			3 7					5													
TOWCESTER	11,960	11,586	277	Under 5 5 upwds.		35 42	2	2		2					3													
WELLINGBOROUGH ...	15,295	16,371	539	Under 5 5 upwds.		20 47	3 12			2 18					1 20													
TOTALS	126,811	129,077	3416	Under 5 5 upwds.	}	466	75	2		45			3		94		43					1						

* Whooping Cough also.

† Medical Officer of Health only appointed at end of 1897.

‡ Including Raunds Urban District.

"Districts" printed in heavy type are those in which there is no Official Notification of Disease.

TABLE GIVING POPULATION, BIRTH-RATE, DEATH-RATE, Etc.,

C.

Within the Urban and Rural Districts of the Administrative County of Northampton

DISTRICTS.	MEDICAL OFFICER OF HEALTH.	RESIDENCE.	Population 1897 (estimated).	PER 1000 OF POPULATION.		Infant Mortality per 1000 Births.	PER 1000 OF POPULATION.			Notifica- tion Act in Operation.	Number of Cases notified.	Hospital Accommo- dation.	No. of Cases re- moved to Hospital.	Percentage of Notified Cases re- moved to Hospital.
				Birth- rate.	Death- rate.		Phthisis Death-rate.	Respiratory Diseases Death-rate.	Zymotic Death-rate.					
URBAN:—														
BRACKLEY (Borough)	J. S. FENTON, M.D.	Brackley... ..	2,763	29·3	20·9	209·8	1·4	3·98	2·17	No		None		
DAVENTRY (BOROUGH)	C. E. OLDACRES, M.R.C.S. ...	Daventry	3,939	28·4	15·9	125·0	1·0	2·0	0·76	Yes	17	Yes		
HIGHAM FERRERS (BOROUGH)	J. CREW, M.R.C.S., J.P. ...	Higham Ferrers...	2,000	33·5	14·5	75·0	1·5	3·0	1·5	Yes	79	None		
DESBOROUGH	H. GIBBONS, M.B.	Desborough	3,534	36·7	13·8	123·0	0·56	0·8	1·1	Yes	15	None		
FAR COTTON	M. E. THOMSON, L.R.C.P. ...	Northampton ...	3,895	27·4	11·2	140·0	0·5	1·79	1·5	Yes	24	By Ar- rangement		
FINEDON	H. BURLAND, M.R.C.S. ...	Finedon	3,690	41·4	15·9	163·3	1·08	3·7	1·89	Yes	37	None		
ST. JAMES' (NORTHAMPTON)	J. M. BRYAN, M.R.C.S. ...	Northampton ...	5,840	40·0	18·6	192·3	2·05	4·28	5·3	No		By Ar- rangement	1	
KETTERING... ..	J. W. DRYLAND, M.R.C.S. ...	Kettering	26,500	35·2	13·5	122·1	1·09	1·96	0·4	Yes	104	Yes	56	54·0
KINGSTHORPE	H. CROPLEY, F.R.C.S. ...	Northampton ...	11,825	38·9	13·2	156·5	1·26	2·6	4·1	Yes	231	Being Made		
OUNDLE	E. SOMERSET, M.R.C.S. ...	Oundle	2,667	14·2	13·1	131·6	0·37	1·87	0·7	No		None		
RAUNDS	W. MACKENZIE, L.R.C.P. ...	Raunds	3,055 *							Yes	39	None		
ROTHWELL	J. MORE, M.D.	Rothwell... ..	4,275	33·4	15·9	181·8	0·46	3·0	2·8	Yes	18	None		
RUSHDEN	C. R. OWEN, M.R.C.S. ...	Rushden	10,950	35·8	15·0	150·1	1·5	2·6	2·37	No		Temporary Small-pox Hospital		
WELLINGBOROUGH	W. W. CLARK, M.D. ...	Wellingborough...	18,000	27·4	13·5	129·5	1·16	1·6	2·05	Yes	125	Yes	6	4·8
TOTALS AND MEANS FOR	URBAN DISTRICTS...	... ..	99,878	33·49	14·79	142·6	1·16	2·3	2·06		689		63	9·1
RURAL:—														
BRACKLEY	G. N. STATHERS, M.R.C.S.	Brackley... ..	7,780	24·3	15·4	153·0	1·15	1·9	0·77	Yes	32	None		
BRIXWORTH	J. R. LOWNDS, L.R.C.P. ...	Brixworth	12,200	24·4	15·2	97·0	0·9	1·88	1·8	No		None		
CRICK... ..	G. WILSON, M.D.	Warwick... ..	2,427	28·4	20·1	116·0	0·8	4·9	0·8	Yes	2	None		
DAVENTRY	A. R. DARLEY, M.D.	West Haddon ...	13,710	29·6	12·8	76·0	0·87	1·7	0·5	Yes	86	Yes		
EASTON ON THE HILL	T. P. GREENWOOD, M.R.C.S.	Stamford... ..	1,635	31·2	8·5	19·6	0·6	1·2	1·2	Yes	1	Yes	1	100·0
GRETTON	J. T. THOMAS, L.R.C.P. ...	Leicester... ..	1,680	22·6	18·4	131·0	2·38	0·59	1·19	Yes	1	None		
HARDINGSTONE	G. H. PERCIVAL, M.B. ...	Northampton ...	8,420	23·3	18·0	178·5	1·4	3·68	0·7	Yes	72	Yes	43	60·0
KETTERING... ..	J. W. DRYLAND, M.R.C.S.	Kettering	11,250	26·2	14·0	125·4	0·4	2·4	0·88	Yes	26	Yes		
MIDDLETON CHENEY	E. FRANEY, M.R.C.S. ...	Banbury... ..	2,620	23·4	16·1	180·3	1·5	1·9		Yes	8	None		
NORTHAMPTON	G. H. PERCIVAL, M.B. ...	Northampton ...	6,610	28·0	17·3	126·5	2·4	2·7	1·4	Yes	88	Yes		
OUNDLE	C. N. ELLIOTT, M.B. ...	Oundle	7,800	23·3	17·0	98·9	1·0	2·3	1·0	Yes	67	None		
OXENDON	T. A. DURRANT, M.R.C.S. ...	Market Harboro'	4,608	21·7	12·3	90·0	0·65	0·86	0·4	No		None		
POTTERSPURY	T. S. MAGUIRE, M.D. ...	Stony-Stratford...	5,880	23·8	14·6	114·2	0·85	2·7	1·9	Yes	27	None		
THRAPSTON... ..	C. N. ELLIOTT, M.B. ...	Oundle	14,500	28·7	16·0	35·9	0·68	2·75	3·2	Yes	51	None		
TOWCESTER... ..	A. P. KINGCOMBE, M.R.C.S.	Towcester	11,586	23·8	15·6	129·9	0·86	2·3	1·1	Yes	86	None		
WELLINGBOROUGH	F. H. MORRIS, M.D. ...	Wellingborough...	16,371	32·9	17·8	172·5	1·4	3·97	1·28	Yes	123	None		
TOTALS AND MEANS FOR	RURAL DISTRICTS...	... ..	129,077	26·46	16·09	125·58	1·04	2·54	1·3		670		44	6·5
TOTALS AND MEANS FOR	ADMINISTRATIVE COUNTY	... ..	228,955	29·5	15·53	134·0	1·09	2·44	1·63		1359		107	7·8

* Included in Thrapston Rural District.

"Districts" printed in heavy type are those in which there is no Official Notification of Disease.

TABLE OF DEATHS,

During the year 1897, in Public Institutions in the Administrative County of Northampton, classified according to DISEASES, AGES, and LOCALITIES, which have been taken into account in arriving at the Corrected Death-rates.

PUBLIC INSTITUTIONS.	DISTRICT.	MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.							AGES.	MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		At all Ages	Under 1 year.	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and up-wards		Small-pox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.					Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, & Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	TOTAL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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SUMMARY OF REPORTS OF THE DISTRICT MEDICAL OFFICERS OF HEALTH.

NAME OF DISTRICT.

PROMINENT FEATURES OF REPORT.

Brackley Borough. (a) **No official Notification of Infectious Diseases.**

(b) No Hospital for the Isolation of Infectious Diseases

(c) Epidemic of whooping-cough during the year.

(d) Insanitary conditions of certain portions of the District were reported as being due to accumulation of filth from pig-styes, with consequent contamination of surface and subsoil. In some cases the nuisances were ordered to be abated, but no attention seems to have been paid to such orders, and in no case has further action been taken. The condition of the pig-styes in this district appears to be such as to give good ground for the unfavourable comments passed on them.

(e) The necessity for preventing the waste of water from the public supply appears to be somewhat urgent.

Daventry Borough. (a) The question of improving the public water supply is under consideration, and appears to be a pressing one.

NAME OF DISTRICT.	PROMINENT FEATURES OF REPORT.
Higham Ferrers Borough.	(b) The enteric-fever cases appear to have been caused by the drinking of impure water.
	(a) Extensive prevalence of scarlet fever.
	(b) Absence of efficient means for isolation of Infectious Diseases, and for disinfection after Infectious Sickness.
	(c) Serious sanitary defect in many instances, due to cleansing of Water closets being dependent on flushing by hand.
	(d) Entire absence of enteric-fever during the year.
Desborough Urban.	(e) Good public supply of water much needed, both for domestic use and for flushing the sewers. Observations as to the possible attainment of this have been made.
	(a) No Hospital for Isolation of Infectious Diseases.
	(b) Water supply from shallow wells, liable to pollution, and deficient in yield during summer months. Public Water Supply about to be commenced with.
	(c) Somerecurrence of enteric-fever during the year.
	(d) Some tendency to overcrowding; want of new houses is now being felt.

NAME OF DISTRICT.	PROMINENT FEATURES OF REPORT.
Far Cotton Urban.	<p>(a) Some prevalence of scarlet fever during the year.</p> <p>(b) Nuisance reported, from refuse of caravans in Johnson's Row.</p>
Finedon Urban.	<p>(a) No Hospital for Isolation of Infectious Diseases.</p> <p>(b) Attention called to improper feeding as a cause of high infantile death-rate.</p> <p>(c) Considerable outbreak of scarlet fever in the latter part of the year.</p> <p>(d) Sewage Scheme nearing completion.</p> <p>(e) Insufficient water supply.</p>
St. James' (N'ton) Urban.	<p>(a) No official notification of Infectious Diseases.</p> <p>(b) No Isolation Hospital nor Disinfecting apparatus, but one infectious case was located in the Hospital belonging to the Hardingstone Rural District.</p> <p>(c) Population estimated to have increased by 400 persons.</p> <p>(d) Considerable prevalence of scarlet fever in the district.</p> <p>(e) Closets in the houses of the poorer classes are, in parts of the district, deficient in flushing apparatus, hence serious blockage of drains.</p>

NAME OF DISTRICT.
Kettering Urban.

PROMINENT FEATURES OF REPORT.

- (a) General death-rate and zymotic death-rate both low.
- (b) Scarlet fever endemic during the year.
- (c) The "Joint Hospitals" proved most useful for isolation purposes; there is accommodation for 32 persons.
- (d) Considerable work has been done in the laying of new sewers, in the making of new surface water drains, in the disconnection of sewers from the main outfall sewers, and in the ventilation of sewers.
- (e) Progress appears to have been made in the construction of Filters for the Sewage Effluent.
- (f) A Public Slaughter-house is strongly recommended.
- (g) There are still Water closets dependent on hand-flushing.

Kingsthorpe Urban.

- (a) Extensive prevalence of scarlet fever.
- (b) Closure of schools necessary, owing to scarlet fever.
- (c) No apparatus for disinfection of bedding, &c., but provision being made for this in the new Infectious Hospital in course of erection.
- (d) Apparently a number of houses with Water closets which are hand-flushed, and, therefore ineffectively cleansed.

NAME OF DISTRICT.
Oundle Urban.

- PROMINENT FEATURES OF REPORT.
- (a) **No official Notification of Infectious Diseases.**
 - (b) No Hospital for Isolation of Infectious Diseases.
 - (c) Some few houses still to connect with the sewerage System.
 - (d) Question of providing a public slaughter-house has been under consideration, but no definite decision thereon has been come to.

Raunds Urban.

- (a) Only separated during the year from the Thrapston Rural District.
- (b) No Hospital for Isolation of Infectious Diseases.
- (c) Drainage system being carried out.

Rothwell Urban.

- (a) No Hospital for Isolation of Infectious Diseases.
- (b) Reference made to the continued existence of the insanitary "Privy-midden," as also of "Earth closets" without earth, and "Water closets" without water.
- (c) Public water supply is apparently needed.
- (d) Ventilation of smaller class rooms in the public elementary schools was found to be bad, and requires remedying.

NAME OF DISTRICT.	PROMINENT FEATURES OF REPORT.
	(e) Certain property is mentioned as still requiring to be drained
	1
Rushden Urban.	<p>(a) No official Notification of Infectious Diseases.</p> <p>(b) Epidemic of Scarlet fever, which abated after thorough disinfection of the school.</p> <p>(c) Outbreak of Enteric-fever, apparently due to the drinking of impure water from shallow wells, although the town's water was available for drinking purposes.</p> <p>(d) Special Report on the Public Water Supply shows need for increase of sources of supply.</p>
Wellingborough Urban.	<p>(a) Overcrowding among the poorer classes.</p> <p>(b) Many old houses becoming unfit for human habitation.</p> <p>(c) Too many private slaughter-houses; public slaughter-house much needed.</p> <p>(d) No complete account of the prevalence of scarlet fever during the year, but spread of the disease believed to be due to congregation of children at "Treats" and in schools.</p>

NAME OF DISTRICT.	PROMINENT FEATURES OF REPORT.
Brackley Rural.	<p>(a) No isolation Hospital, and one is required.</p> <p>(b) Vital Statistics not reliable, owing to presence of a considerable number of persons in the district working on the construction of new railway.</p> <p>(c) Remarkable freedom from prevalence of <i>principal</i> zymotic diseases, except in the villages of Cronghton and Sulgrave, where scarlet fever appears to have been endemic for some years.</p> <p>Whooping cough caused four deaths, and influenza epidemic towards close of 1897.</p> <p>(d) Prosecution was instituted for the exposure of a child in a public place while suffering from scarlet fever, and resulted in a conviction with a fine imposed.</p> <p>(e) New sewers put in at Crowfield, Eydon, and Helmdon; but more required at Helmdon and Syresham.</p>
Brixworth Rural.	<p>(a) No official Notification of Infectious Diseases. *</p> <p>(b) No Hospital for Isolation of Infectious Diseases.</p>

* While these pages were in the press, the Brixworth Rural District Council, by the casting vote of the Chairman, resolved to adopt the Infectious Diseases Notification Act,

NAME OF DISTRICT.	PROMINENT FEATURES OF REPORT.
Crick Rural.	(c) Diphtheria at Guilsborough and Coton villages, and Infections Throat-illness at Spratton.
	(d) School closed at Guilsborough on account of Diphtheria.
	(a) No Hospital for Isolation of Infectious Diseases. (b) House-to-house survey carried out during the year. (c) Three Cottages in Crick and five in Kilsby condemned as unfit for human habitation ; of these, one in Crick and all in Kilsby have been put into repair, the others remaining closed.
Daventry Rural.	(a) Scarlet fever prevalent in 10 out of the 27 parishes in the District. In consequence, Schools at West Haddon were disinfected, at Newnham were closed, and at Weedon the holidays at Christmas were prolonged for a fortnight.
	(b) Whooping cough was very prevalent at Dodford.
	(c) It is stated that no case of infectious disease was removed to the Isolation Hospital.

NAME OF DISTRICT.

PROMINENT FEATURES OF REPORT.

- (d) The necessary scheme of water supply to Long Buckby is in hand, but apparently work has not yet been begun.
- (e) Several drains and ventilating shafts have been repaired and made at Weedon.
- (f) The drainage of West Haddon appears to have given rise to reasonable complaints, and in consequence, where necessary, traps have been ordered for drains as well as ventilating shafts.
- (g) Drains have been relaid with socketted pipes at Woodford, Newnham, Badby, and Byfield.

Easton-on-the-Hill
Rural.

- (a) Attention called to necessity for abolishing Privy Vaults, and substituting dry earth closets with pails.
- (b) Recommendation that Dipwells should be closed, and that wells should be protected from surface pollution.
- (c) Recommendation that the eaves-spouting of all dwelling-houses should be kept in repair, so as to preserve foundations from damp.

NAME OF DISTRICT.
Gretton Rural.

- PROMINENT FEATURES OF REPORT.
- (a) No provision for either Hospital Accommodation or Disinfection of clothing or bedding; District Council advised to combine with Uppingham in providing for both.
 - (b) Scavenger advised for the larger villages.
 - (c) Drainage in all cases into ditches and brooks.
 - (d) 120 yards of old sewers relaid with socketted pipes.

Hardingstone
Rural.

- (a) High mortality; no particular disease answerable, but, owing to migration of young people into towns, old people preponderate in the villages, and account for high rate of the mortality.
- (b) Low birth-rate, continuous since 1886.
- (c) Hospital Isolation of Infectious Diseases greatly helped to prevent the spread of disease, notably in Hackleton, Brafield, and Castle Ashby.
- (d) Improved water supply to village of Hardingstone.
- (e) Irrigation farm laid out for village of Little Houghton.
- (f) The effluent from the Irrigation farm at Hardingstone has at times been complained of, apparently with good reason.

NAME OF DISTRICT.	PROMINENT FEATURES OF REPORT.
<p>(<i>g</i>) Drainage at Yardley Hastings is proceeding.</p> <p>(<i>h</i>) Drainage at Roade has not yet been commenced, and the matter is most pressing.</p>	
Kettering Rural.	<p>(<i>a</i>) Schools closed at Stanion on account of the prevalence of Measles ; also at Corby and Cottingham on account of Influenza.</p> <p>(<i>b</i>) The question of improving the water supply of Pytchley is receiving attention</p> <p>(<i>c</i>) Model Bye-Laws are expected to come into force soon at Broughton and Burton Latimer.</p> <p>(<i>d</i>) Plans are in course of preparation for the Broughton Sewage Scheme.</p>
Middleton Cheney Rural.	<p>(<i>a</i>) No Hospital for Isolation of Infectious Diseases.</p> <p>(<i>b</i>) At Upper Boddington are Cottages without proper water supply, but measures are being taken to remedy this evil.</p>
Northampton Rural.	<p>(<i>a</i>) Slight increase of population due to building operations in the Abington portion of district.</p>

NAME OF DISTRICT.

PROMINENT FEATURES OF REPORT.

- (b) High rate of mortality, due to no special disease, nor affecting any particular district, but general throughout.
- (c) Scarlet fever prevalent in Abington, Duston, and Kislingbury, principally imported from Northampton.
- (d) Serious outbreak of Diphtheria at Harpole, 40 cases with 5 deaths. This outbreak was so clearly attributable to the grossly insanitary condition of the public elementary school, that the school was closed by the order of the Local Authority as an insanitary building. It was thus left to the Education Department to see that steps were taken to provide for the education of the children, which, through temporary and final closure of the school, had been almost in abeyance during the year.
(Re-opened at end of March, 1898).
- (e) Water supply to village of Kislingbury being provided.
- (f) Dilapidated cottages at Great Billing village have been condemned, and will be demolished.

NAME OF DISTRICT.
Oundle Rural.

PROMINENT FEATURES OF REPORT.

- (a) No Hospital for Isolation of Infectious Diseases.
- (b) Attention drawn to prevalence of tubercular disease in certain villages, and necessity in such cases for improving the light and ventilation of dwelling-houses in which cases of phthisis occur.
- (c) Schools closed at Nassington, Fotheringhay, and Lutton for Scarlet-fever prevalence, at Nassington also because of Whooping-cough, and at Hemington on account of Mumps.
- (d) Water supply at Ashton has been improved, and an extension of the supply at Benefield made.

Oxendon Rural.

- (a) **No official Notification of Infectious Diseases.**
- (b) No Hospital for Isolation of Infectious Diseases.
- (c) Outbreak of Measles at Sibbertoft; also at Farndon, obliging school to be closed.
- (d) Severe epidemic of Whooping Cough at Dingley.
- (e) Means been taken to increase amount of Water supply at Stoke Albany.

NAME OF DISTRICT.	PROMINENT FEATURES OF REPORT.
	(f) Recommendation for protection of wells throughout the district.
Potterspury Rural.	<p data-bbox="794 537 1475 640">(a) No Hospital for Isolation of Infectious Diseases.</p> <p data-bbox="799 654 1475 877">(b) Parts of the villages of Potterspury and Paulerspury still without a proper and sufficient water supply.</p> <p data-bbox="789 890 1475 1157">(c) The sewage outfall at Old Stratford requires attention, and special treatment by means of a settling tank, etc., is recommended.</p>
Thrapston Rural.	<p data-bbox="789 1189 1475 1292">(a) No Hospital for Isolation of Infectious Diseases.</p> <p data-bbox="781 1306 1475 1463">(b) Severance of Raunds from the District, and its establishment as an Urban District.</p> <p data-bbox="778 1477 1475 1580">(c) Disposal of Thrapston Sewage is still under consideration.</p> <p data-bbox="778 1594 1475 1697">(d) School closed at Islip on account of Scarlet-fever.</p> <p data-bbox="773 1711 1475 1868">(e) Schools closed at Little Addington on account of Whooping cough.</p> <p data-bbox="773 1882 1475 1985">(f) Improved system of drainage at Great Addington.</p> <p data-bbox="768 1998 1475 2102">(g) Improvement in drainage at Titchmarsh.</p>
Towcester Rural.	<p data-bbox="764 2134 1475 2237">(a) No Hospital for Isolation of Infectious Diseases.</p> <p data-bbox="759 2251 1475 2452">(b) Considerable prevalence of Scarlet-fever, especially in Towcester, Cold Higham, and Blisworth.</p>

NAME OF DISTRICT.	PROMINENT FEATURES OF REPORT.
Wellingborough Rural.	(c) Whooping-cough also prevalent in the summer.
	(d) Systematic Scavenging by each town and village strongly urged, as also the abolition of the common form of privy-cesspit.
	(a) No Hospital for the Isolation of Infectious Diseases.
	(b) New houses at Earls Barton have been built with Water-closets, but, as no water is laid on, the drains must become blocked and require constant attention and special flushing.
	(c) Drainage at Little Irchester has been a source of nuisance, and requires immediate attention as it pollutes the River Nene.
	(d) Irthlingborough is still in want of a proper sewage farm, or scheme for dealing with its sewage.
	(e) Earls Barton has a deficient water supply.
	(f) Drainage works have been carried out at New Barton, Sywell, Irchester, Bozeat, Grendon, and Earls Barton.
	(g) Great Doddington has now a good supply of water.

DIRECTIONS FOR THE MANAGEMENT OF INFANTS.

WASHING AND CLOTHING.

Keep them warm. Avoid exposure of shoulders, arms, and legs. Children should wear stockings up to the knees. Keep them clean ; wash them all over daily with warm water.

AIR AND EXERCISE.

Give them plenty of fresh air ; take them out whenever the weather is fine. Open the windows at least twice a day.

SLEEP.

Babies require plenty of sleep. Up to three years old a morning and afternoon sleep, at fixed hours, is requisite. Avoid nursing them to sleep in the arms. If possible, let the child sleep in a cot by itself. *On no account give Teething Powders or Soothing Syrups.*

SUCKLING.

The mother's milk is the natural food up to the seventh month. If the mother has plenty of breast-milk, no other food should be given. Put the child to the breast not oftener than every two hours for the first six weeks ; after that age gradually increase the intervals to three or four hours. You should not give the breast whenever the child cries ; you may increase its fretfulness by doing so.

As a rule avoid suckling between eleven at night and five o'clock in the morning ; the infant soon becomes accustomed to this plan, and your sleep will therefore be less disturbed. If the mother's milk be insufficient, give one part of fresh boiled cow's milk diluted with two parts of water during the first six weeks, then to the end of the third month equal parts of milk and water, and afterwards two parts of milk to one of water. To each bottleful add two table-spoonfuls of lime-water, and a small lump of white sugar. The mixture thus prepared should be given warm. *All cow's milk should be boiled before use,* and should contain a good amount of cream. Use a feeding bottle.

The bottle and its teat should be cleaned after each use, the bottle with scalding water. Never give a child sour milk; you will detect sourness sooner by smell than by taste.

Only milk should be given up to the seventh month. Do not give a child baked flour, arrowroot, cornflour, biscuits, or bread, until it is seven months old.

WEANING.

Wean gradually, beginning at the seventh month, ending by the ninth month. On no account keep the baby at the breast after it is twelve months old; to do so weakens both the mother and the child.

When the child has reached the age of seven months it should have one or two meals a day of milk, thickened either with simple biscuits, or baked flour, or well-soaked bread. When nine to ten months old, one meal should be of broth, or beef-tea, with rusk or biscuit well soaked in it, or of bread crumb or finely-mashed potato with gravy.

At twelve months give an egg or a little milk-pudding. At eighteen months give a little meat every day, finely minced or pounded into a soft pulp.

SPECIAL WARNING.

When a child cries habitually after food, or loses weight instead of gaining it, there is usually some fault in the manner of its feeding. In such a case, a change of diet must be made. No time should, therefore, be lost in seeking medical aid, and getting skilled advice as to what food should be substituted.

It is a *great mistake* to give children under two years old "*just what you have yourselves.*"

